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Contents.

Congress at Bournemouth—

CONFERENCE IV.—Veterinary Inspectors.

Address by Wm. Woods, F.R.C.V.S. 281

"Swine Fever, its Economic and Hygienic Importance," by E. Whitley Baker, M.R.C.V.S. 283

"Our Meat Industry," by Professor Share Jones, D.V.Sc., M.Sc., F.R.C.V.S. ... 284

"The Incidence of Anthrax," by J. O. Powley, M.R.C.V.S. 287

CONFERENCE V.—Sanitary Inspectors.

Address by W. G. Cooper, F.I.S.E.... 292

"Smoke Abatement," by Alec Longfellow 301

"Smoke Abatement," by Charles Hy. Norton 302

"Food Supplies: a Few Random Notes on the Difficulties of Control," by E. Carratt 303

"Slums and Slum Life," by H. W. Bladon 306

CONFERENCE VI.—Health Visitors.

Address by Professor A. Bostock Hill, M.Sc., M.D., D.P.H. 311

"Public Health Propaganda Work," by Miss H. S. Cooper Hodgson 313

Decisions of the Council on Resolutions passed at the Bournemouth Congress, 1922 ... 317

Midwives and Unqualified Practice: Note on the present position 318

OBITUARY 320

Supplement—

Hull Congress *97*
General Notes *106*
Meetings Held *107*
Dominion and Foreign Notes *109*
Forthcoming Meetings *109*
Calendar *111*
Elections *114*
Obituary *116*

LIST OF ADVERTISERS.

The numeral indicates the page on which the Advertisement appears; the dash (——) denotes that Advertisement is not in this issue.

Activated Sludge, Ltd. xvi
Bayliss, Jones & Bayliss, Ltd. ... x
Berkefeld Filter Co. (British) ... —
British Commercial Gas Assn.... x
British Electrical Development Assn. —
British, Foreign & Colonial Automatic Light Controlling Co., Ltd. ... ... —
Broad & Co., Ltd. ... ...
Burn Bros. (London) Ltd. ... vii
Cadbury Bros., Ltd. vi
Candy Filter Co., Ltd. ... ... —
Claughton Bros., Ltd. ... ... —
Cook, Edward, & Co., Ltd. ... vi
Crapper, Thomas & Co., Ltd. ...
Dominion Machinery Co., Ltd. —
Doulton & Co., Ltd. v
Educational Supply Assn., Ltd. —
Ferodo, Ltd. ix
Flavel, Sidney, & Co., Ltd. ... xvii
"Glaxo" iv
Harley, T. xi
Harpic Co. ix
Harrison, G. W., & Co. ... —
Holts Patents, Ltd. ix
Horlick's Malted Milk i
Horton Manufacturing Co., Ltd. —
Jennings, George ... ... —
Jennings, George, Ltd. ... vii
Kay Bros., Ltd. xi
Kirby, Fairbank, Ltd. i
Lewis, H. K., & Co., Ltd. ... xiv
Macfarlane, Walter, & Co. ... iii
Manlove, Alliott & Co., Ltd. ... —
Meldrums, Ltd. ... ... —
Minimax, Ltd. xiv
Newton, Chambers & Co., Ltd. xi
O. Bruster & De Launoit ... iii
Pontifex, H., & Sons, Ltd. ... viii
"Ronuk," Ltd. ... ... —
Royal Society for the Prevention of Cruelty to Animals ... xii
Salter, George, & Co., Ltd. ... iv
Sankey, J. H., & Son, Ltd. ... xiii
Septic Tank Co., Ltd. ... ... —
Sharr, Jones & Co., Ltd. ... —
Silicate Paint Co. ... ... —
Slack & Brownlow vi
Smethurst, Herbert, & Sons, Ltd. xv
Tintometer, Ltd. x
United Alkali Co., Ltd.... ... xv

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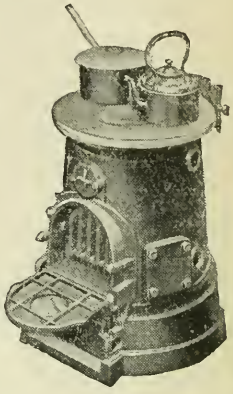

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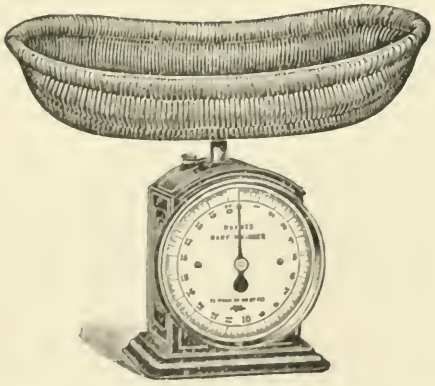

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JOURNAL

OF

THE ROYAL SANITARY INSTITUTE

CONGRESS AT BOURNEMOUTH.

CONFERENCE IV.—VETERINARY INSPECTORS.

Presidential Address, by Wm. Woods, F.R.C.V.S.

IN opening this section of the Congress I shall not attempt a scientific address and shall only occupy your time for a few minutes because the subjects chosen for our consideration are of such a character that everybody can join in, and because I have no doubt the time allotted to us will be very fully occupied, and I hope we shall have the assistance both of Medical Officers and Sanitary Inspectors in any views they may hold on the different questions; but still I remember that this is the Veterinary Section, and as a Veterinary Surgeon I should like to say a few words from that point of view. I wonder if you ever consider that in common with the Medical Profession, we ought to be prosecuted for attempted suicide, because the objects for which we are working are, according to their success, all calculated to diminish the necessity for our services, and I wonder whether the general public ever consider that in our endeavours to create the city of Hygeia; the city of health, where the conditions shall be such that disease will be abolished; that in proportion to our success in these ideals, so will our ruin be accomplished? It seems strange that we who live by disease should be so continually striving to abolish our means of living, but so it is, and the explanation probably is that the greatest happiness is produced by endeavouring to help others. Now as to the part of the Veterinary Profession. You will see, from time to time, articles in the newspapers drawing attention to what they call the unscientific methods of the Veterinary Profession in dealing with contagious disease by stamping it out and pointing out that really, in the twentieth century, we ought to be able to do something better than slaughter as the mainspring of our treatment; and letters innumerable have appeared with reference to the recent outbreak of Foot and Mouth disease, stating

that even in the year 1883 when the last great outbreak took place, Foot and Mouth disease was treated and cured. I have found amongst both Medical Officers and Sanitary Inspectors, a bewildered state of mind as to why a mild, easily cured disease, such as Foot and Mouth, should be treated so drastically; why we slaughter, not only the affected animals, but all that have been in contact. I hasten to inform you that it is not because Veterinary Surgeons wish to deprive themselves of a lucrative part of their business by not treating the disease, but purely and simply because it is in the interest of the nation at large that they should stamp it out rather than treat it. And the explanation is this, and I will take only the milking stock of the country to prove the advisability of slaughter in Foot and Mouth disease. There are 2½ millions of milch cows in this country, and if the disease were allowed to run loose it is a modest estimate to declare that more than half a million of these would contract the disease, so extraordinarily contagious is it (more than this number were affected in 1883). Now it has been computed that what with loss of flesh during the week or ten days when the condition of the cow's mouth is such that she has to be kept alive by gruel and slops, together with the cost of treatment and the permanent loss of milk owing to the cow not coming back to her full supply, and to occasional deaths, the average loss amounts to about one third of her value. Now if you take the average value of each milking cow at £30, not an extravagant estimate, that means a loss of £10 for each cow affected, or on half a million cows a loss of five million pounds. The question, therefore, is one purely of economics: Is it better for the country to stamp out the disease at a cost of one million or to treat it at a cost of five millions. The outbreak now in process of being stamped out has been a loss to the nation of one million pounds and, incidentally I may add, reckoning at £1 a head for treatment, a loss to Veterinary Surgeons of about half a million pounds, yet they have cheerfully borne and advocated that loss because they were convinced it was in the interest of their country to do so, and it seems rather hard that ill-informed public opinion should brand them as unscientific for their unselfish patriotism.

I hope our friends of the allied professions will not forget to correct this state of public opinion whenever they may come across it. It is with this object I have taken the opportunity of referring to it.

Swine Fever, its Economic and Hygienic Importance, by E. Whitley Baker, M.R.C.V.S.

(Abstract.)

The writer suggests the following procedure might be effective :—

I. Isolate all newly purchased pigs for six weeks.

II. Keep your own boar for your own pigs only.

III. Castrate your own pigs or have them castrated by your own employee or by a duly qualified and careful practitioner.

IV. Procure no pigwash from premises where others obtain theirs.

V. In the event of an outbreak of swine fever, dispose of all fat pigs for slaughter immediately.

VI. Have all healthy pigs inoculated with serum immediately an outbreak takes place, and mix them with the affected.

VII. Scrupulously attend to your drainage and the floors of your sties.

VIII. Use your own sacks for purchase of pig food, and see from where they are filled.

IX. Purchase no unthrifty looking pigs in the hope that they will improve and be profitable.

X. Report to your local authority early in all unexplainable pig ailments.

Our Meat Industry, by Professor Share Jones, D.V.Sc., M.Sc., F.R.C.V.S., Director of Veterinary Education, University of Liverpool.

AGRICULTURE is still our greatest industry, and live stock is the greatest division of agriculture. There are hundreds of thousands of acres in these island which do not grow an ear of wheat, but upon which thrive animals that produce meat, than which there is no finer in the world's market. That this is so is due more perhaps to Providence than to any real provision which the people of this country have made for their care and protection. It was given in evidence before a Royal Commission, and I repeated it at the Newcastle Conference, that in the area of one of our small colleges 90,000 sheep died every year, without any real attempt being made to ascertain the cause of death, let alone a means of prevention.

If sought for, ample evidence can be found on every hand that it is in the highest national interest of every country to preserve and protect its animal population.

As to what we do for the meat question in this country some estimate can be formed when we consider the strength of the service dealing with the problem. I have not the total figures, but it is given as a fact that the number of veterinary surgeons exclusively engaged in all the branches of Public Health work is less than 50. In Germany, before the war, over 1,100 were exclusively engaged in the care of the meat industry alone. This number is one-third of the total number of qualified veterinary surgeons on our Register, and nearly one-half the number of veterinary surgeons in the British Isles, for a large number on the Register are abroad. In France, Belgium, Switzerland, and even Rumania, the work is similarly advanced.

The official staff dealing with the work under the federal system in the United States of America is 2,650, and of these 800 are veterinary surgeons. The scope of an address of this kind will not permit me to deal in detail with the comprehensive nature of the functions performed by this magnificent organisation. It will suffice for me to say that they embrace the supervision of every step from the live animal to the meat ready for consumption. But I would like to make special reference to two branches of the work, namely, the ante-mortem inspection, and the utilisation of the waste and bye-products. Regulation 9, para. 1, governing the work, states that an ante-mortem examination and inspection shall be made of all cattle, sheep, swine and goats, about to be slaughtered in an official establishment before this slaughter shall be allowed. Then follow specific paragraphs indicating the manner in which the examination is to be con-

ducted. Par. 6 deserves special mention, as showing the extra care taken. It states that "all animals which, on *ante-mortem* examination, do not plainly show, but are suspected, or afflicted with any disease or condition that, under these regulations, may cause condemnation in whole or in part on *post-mortem* inspection *shall be so marked as to retain their identity until final post-mortem inspection.*" To the utilisation of the bye-products special attention is also drawn. There is a table of them compiled showing their average weight and the proportion of the weight of the whole animal which each forms. The use of a large percentage of this material is neglected in this country.

I have been deeply impressed by a report on the method of dealing with meat-producing animals in Venezuela, which has just been sent me. All animals must be subjected to an *ante-mortem* examination, otherwise the meat cannot be exported. If the carcases only are examined the examination is considered of no value, and certificates issued are not accepted. Cattle are brought from the ranches to be fattened in large fields (the Spanish *potreros*.) Here they remain several weeks, or, maybe, months, before slaughter. From the day they enter the potreros they are kept under observation by the Veterinary Meat Inspector. He visits them periodically. They are weighed when they first enter the fattening and observation fields, for each farm has a machine for this purpose capable of weighing from 6 to 40 cattle, depending upon the size of the farm. The Inspector notes not only diseased animals, but those which are unthrifty and show little or no improvement. Unthrifty animals are weighed at definite intervals, until it has been concluded that progress is not being made under the most favourable conditions, when the Veterinary Inspector is to pass his verdict on them. If on his advice an unthrifty animal be slaughtered, the Veterinary Inspector decides the use to be made of the carcase. Should it be unfit for food, the blood and meat are used for fertilisers, horn and hoofs for glue making, outer horns for making combs, the hair of tails is packed for exportation and hides are salted, etc. All offal of sound animals is dealt with in the same thorough manner. The soundness of such economy in this work in America is well expressed in a statement which is common in North and South America, that when dealing with an animal body "nothing is lost but the breath." Here indeed is evidence of economic treatment of the meat industry. There is much in it which we could apply in this country.

But when talking of it, we must not forget the question of finance. We must not overlook the existence of "Axes" and Ratepayers' Associations. The mere mention of any increase of officials requires very careful consideration to-day. I am Chairman of a large Ratepayers' Association. By

many, such bodies are regarded as made up of critics and obstructionists. But when I tell you that the motto of the Association is " True economy is wise expenditure " I think you will agree with me that, when we have a case, they are a body of men and women worth cultivating. We should take the public, and especially the ratepaying public, into our confidence, and whenever we have new developments to propose we should utilise every legitimate opportunity of giving them the fullest explanation.

The very mention of an organisation on the lines of that of the United States to-day is calculated to give the British ratepayer a shock. When he learns that, owing to the thoroughness and completeness of the organisation, the splendid machine to which I have referred *cost only 6 cents a carcase* he will be immediately relieved. Yet for this small outlay the public have a real assurance that when they buy this meat they are not buying something which will poison or otherwise injure them, and they also have the knowledge that most valuable commercial material and bye-products are conserved for the use of the nation.

The effect of this small cost on the price of meat is practically negligible.

In the United States of America, in 1919, 212,245 carcases of cattle, sheep, swine and goats, and hundreds of thousands of parts and organs (locally diseased) were prevented from being sold for human consumption. The greater part of this huge bulk of material was turned to commercial use.

It is my conscientious belief that a system properly and comprehensively organised in this country can be made to pay for itself.

But even if this were not so and altogether apart from this, we, in preventive medicine, have nothing to fear if we face quite frankly those who are called upon to meet our public expenditure, even in these most arduous times. We can do more than any other section of the community to lessen our country's greatest social burden, namely, the care and maintenance of those who have become life's derelicts through diseases which might have been prevented. In addition to being deprived of useful lives, ask any Guardian of the Poor, and he will tell you what might have been saved.

The Incidence of Anthrax, by J. O. Powley, M.R.C.V.S., Ministry of Agriculture and Fisheries, London.

Anthrax in this country does not assume generally the epidemic form which obtains in certain countries abroad, where climatic conditions favour the growth of the organism outside the animal body, but usually occurs as isolated sporadic outbreaks, consequently deaths do not occur on such a large scale, and the disease does not take on so much economic importance.

Whilst the deaths from anthrax amongst animals in this country are not negligible, its chief importance is due to the fact that human beings handling diseased carcases or contaminated materials are liable to become infected. On the other hand one must not lose sight of the fact that the Ministry of Agriculture and Fisheries Anthrax Order of 1910 is an important factor in the control of the spread of the disease, in that steps are taken in all reported outbreaks to destroy active Anthrax bacilli and spores by actual cremation of diseased carcases and infected materials, and the disinfection of premises.

One of the chief factors of the incidence of Anthrax in certain countries (*e.g.*, Russia), is the climatic conditions, the disease becoming epidemic during those seasons when the temperature and moisture conditions are favourable, the disease becoming more prevalent during the hot moist seasons. In Great Britain climatic conditions do not appear to have much, if any, influence on its incidence.

According to Stockman, Anthrax is more prevalent in England at those seasons when the animals do not go out to grass, and which he attributes to the fact that such housed animals are fed to a large extent on imported foodstuffs.

Certain soils are said to retain the infection better than others, clayey soils retaining the infection longest.

Altitude has some bearing on incidence as it is noted that low lying marshy soils, those liable to periodic flooding, appear more favourable to Anthrax than the higher soils, where probably the drainage is better, and the soils have a better chance of cleansing themselves.

Geographical position does not appear to have much bearing on the subject in Great Britain.

Except that the disease is more prevalent in winter when animals are stall fed, seasonal distribution does not appear to enter in.

In connection with soils one can now discuss the question of the so-called

Anthrax pasture. A large number of these Anthrax pastures have been known to harbour Anthrax for very many years, even for generations. The probability is that in the first place an Anthrax animal may have been bled on the pasture, and the infection perpetuated by subsequent deaths from Anthrax. A fairly recent outbreak on one such pasture is well worth recording. A newcomer to the district rented some hill grazing, and placed 40 three-year-old bullocks thereon. About two months later, the ditches were cleaned out, and many bones, indicating many burials were unearthed. About five to seven days later several cattle were found dead, and the majority of the remainder ailing. During the week twelve of the forty died from Anthrax, and the remainder recovered. It is of interest to note that the cattle drank from a surface pond on the lower ground, and that immediately after the cleaning out of the ditches there was a heavy rain, which flushed down the newly cleaned out ditches into the drinking pond, undoubtedly carrying down with it a very heavy Anthrax infection.

In some cases it is known when the pastures actually became infected, as in the case of certain Anthrax infected sewage farms. To quote one case in point in the Midland Counties on a series of sewage farms covering about 2,500 acres. Up to a few years ago these farms had never been known to harbour Anthrax, having been used for cattle grazing principally. A large number of the pastures were flooded with sewage which contained the effluents from several tanneries, and since the flooding the deaths from Anthrax occurred periodically until vaccination was adopted, as many as twelve cattle dying in one year. A somewhat curious and noteworthy fact in connection with these farms is that sheep have grazed continuously on the known Anthrax pastures, and whilst cattle were dying from Anthrax, no sheep were lost.

Another type of Anthrax pasture is that found on the banks of certain streams near tanneries. On one such pasture in Wiltshire the outbreaks of Anthrax declined considerably during the war, but during the last few years has increased to its pre-war figure. The only factor to account for this decline and recurrence is that during the war no foreign goat skins were tanned, but are now being tanned in quantity again. In this case it may interest the Meeting to know that the owners of the tannery pay compensation to all occupiers of land within a certain radius for all animals which die from Anthrax. The contamination in all cases may not be due to fresh infection from the tannery, but to land infection from previous outbreaks.

The use of artificial manures is a most important factor in incidence, the chief manures involved being bone manures, shoddy dust, sweepings from factories where wool is treated, and possibly manures manufactured at knackeries.

Anthrax occurs in sheep and goats on a large scale in India, Mesopotamia, Arabia, Asia Minor, Egypt, Peru, and other countries, and the Departmental Committee on Anthrax demonstrated the order of severity of infection of materials as follows : East Indian goat hair, East Indian wool, Persian wool, mohair and other goat hair, Egyptian wool, and alpaca. The compulsory treatment of all dangerous wools coming into the country at the port of entry by washing in alkaline solution for 15 to 20 minutes, and then by treating for 15 to 20 minutes with a 2 to 2½ per cent. solution of Formalin, should be an important factor in eliminating shoddy as a means of spread of Anthrax.

In connection with bone meal, one case occurred where bone meal purchased for manure was inadvertently fed to cattle. Five days later four animals were affected with Anthrax, two died, and two recovered. A case is on record where Anthrax occurred in animals on premises where shoddy purchased for manure was used as bedding.

We now come to one of the most important factors, if not the most important factor, in the incidence of Anthrax, namely, feeding stuffs chiefly of foreign origin.

In the *Journal of Comparative Pathology and Therapeutics* for 1901, p. 176, Macfadyean demonstrated Anthrax Bacilli in linseed cake manufactured in England from linseed coming from Calcutta and Karachi, and in the same Journal for 1905, p. 326, he demonstrated B. Anthracis in oats. In both these cases cattle had died after feeding from the contaminated stuffs.

Foreign cattle feeding cakes are most often under suspicion as the means of conveying Anthrax, and in one case Argentine bran appeared to be implicated. Three outbreaks occurred in Norfolk on three separate sets of premises, in animals fed on the same consignment of ground Rangoon beans (Haricot). These beans went straight from the millers for grinding, and thence to the farms.

An outbreak occurred in pigs fed on dried pigs blood (2 ozs. per pig per diem). The manufacturers stated that after draining from the pigs, the blood was heated in a jacketed kettle for 15 minutes at a temperature of 212° F. The residue was then pressed and heated in a steam jacketed drier for 30 minutes at from 215° to 230°F. Unfortunately the blood was not tested for Anthrax contamination, so that one could not definitely implicate the blood feeding.

Undoubtedly a proportion of the foreign foodstuffs are contaminated on board ship by foreign hides. Anthrax organisms have been cultivated from imported shoddy grain, *i.e.*, grain obtained from the sweepings of ships' holds, and shoddy grain is looked upon as being most dangerous, and probably contains dust from infected hides.

As you are all doubtless aware, Anthrax is most prevalent in Aberdeen, and Aberdeen uses much cattle food imported from China, Manchuria, India, Russia, Mississippi Valley, and Argentine, and according to the annual reports of the Chief Veterinary Officer of the Ministry of Agriculture and Fisheries, the parts of the country into which artificial foods and animal products (bones, &c.) are mostly imported, show the highest incidence of Anthrax.

Other occasional factors in the incidence are transmission by biting insects. According to Dalrymple the carbuncular form of Anthrax predominates in Lousiana, the infection being transmitted to healthy animals by horse flies, known there as Charbon flies. Cutaneous Anthrax in this country must be very rare, but it is worthy of note that recently in Devonshire there has been a serious outbreak of Anthrax involving a series of farms where several cattle have shown somewhat large œdematous skin swellings with very high temperature (108° F.), and this may possibly have been cutaneous Anthrax. I believe all the animals with skin lesions recovered.

Bungert succeeded in transmitting the disease through sheep ticks which had previously sucked blood from an infected sheep, and contained Bacilli in their intestines.

In certain states of U.S.A., the Turkey Buzzard and Carrion Crow are capable of carrying Anthrax on their feet, beaks, and in what they throw up after feeding on an Anthrax carcase. The carrion crow in this country may be an occasional means of conveying infection.

The so-called ' Carrier ' animal cannot be lost sight of altogether as a means of spreading infection, the ' carrier ' being probably a recovered animal. Recoveries from Anthrax in animals are probably much commoner than is generally supposed.

Fodder (hay) grown on Anthrax contaminated meadows may be an infrequent cause of sporadic outbreaks.

According to Stockman 13 per cent. of Anthrax outbreaks in this country are due to soil infection, 69 per cent. to imported foodstuffs, and 18 per cent. to other causes, and the chief causes of variation in incidence are the numbers of animals in given areas, the use of bone and shoddy manures, and feeding with artificials.

The average death-rate per outbreak is 1·3 per cent.

Incidence is greatest in winter, as stated previously, when most artificials are used, and this accounts probably for the greater incidence amongst cattle than sheep.

The reason for the less incidence amongst sheep in this country can be explained in one of three ways :—

(*a*) sheep are more immune than cattle.

(*b*) Anthrax is not conveyed by the kind of pasture usually allotted to sheep.

(*c*) sheep are not stall fed, and thus do not receive such large proportions of artificials.

With reference to (*a*) I think it is generally admitted that sheep have not any special immunity to Anthrax in this country, the reason resting between (*b*) and (*c*).

I wish finally to call attention to a most important factor in the incidence in this country, and one fraught with the greatest danger to human life, viz., *Emergency Slaughter*, and by emergency slaughter I mean the common practice of "Cutting an animal's throat to save its life." How common an occurrence it is to meet cases where an animal suddenly taken ill has had its throat cut when *in extremis*, and the carcase dressed for human consumption. In such cases not only is the stock owner laying up more trouble and losses for himself by spilling Anthrax blood, and permanently infecting his pastures and buildings, but he is also indulging in the more reprehensible practice of endangering the lives of individuals employed in the dressing and subsequent handling of the carcase. The practice can only be looked upon as criminal, and the plea of ignorance that Anthrax was not suspected should not be entertained by any Bench of Magistrates in adjudicating on any such case.

CONGRESS AT BOURNEMOUTH.

CONFERENCE V.—SANITARY INSPECTORS.

Presidential Address by W. G. Cooper, F.I.S.E., Chief Sanitary Inspector, Bournemouth. (Fellow.)

IN this address it is my purpose to touch briefly on a few of the most important problems which confront us in our daily routine and duties.

The Housing Schemes carried out throughout the country during the past two or three years have by no means met the demand, and more houses are still needed to meet the requirements of the growing population.

It has been frequently assumed that the unparalleled shortage was mainly due to war conditions and to the high cost of labour and materials ; but from the returns it is shown that had there been no war, there would still have been a serious shortage, as only about one half the number of houses required were built in the five years from 1909 to 1914. Obviously there must be some other cause or causes to bring about such a fall in production of dwelling houses for the working classes, and these factors are stated to be,

(*a*) Cost of building, (*b*) Cost of Capital, (*c*) Cost of Land.

(*d*) Burden of Local Rates.

(*e*) Sanitary Legislation : Housing and Public Health Regulations, The Finance Act, 1909–10.

(*f*) Buildings Societies' cessation of developments.

But whatever may be said of these factors, they made little or no difference prior to 1909. Up to this date, except in agricultural areas and a few special urban districts, the production more than met the demand.

Business men, who claim special knowledge, and those who have largely financed urban working-class dwellings are practically unanimous in affirming that the original and greatest cause is the inclusion of such property within the taxing provisions of Part I of the Finance Act. The effect of this inclusion has proved a calamity as far as the provision of houses for the workers is concerned.

The shortage has now to be made up at enormously increased cost, and the number of houses required is larger than ever, owing to the great number of earlier marriages which took place during the War and have taken place since. How is this shortage to be met ?

In pre-war days, the erection of houses for the industrial workers was left to the generally unappreciated efforts of the so-called 'jerry-builders.' The speculative builders are now much more valued, and I believe they will eventually solve the problem again. Their plan of operation was to select a neighbourhood where houses were wanted, and where land could be obtained cheaply; they then erected a class of house in demand at such a price they could secure for sale, or let at a remunerative return for the capital invested. They may have built long monotonous rows of barrack-like houses which do not appeal to the aesthetic taste or idea, but the houses inside were generally planned to meet the special demand of the locality, and were of such a rent as to allow one family for each house.

It is to be hoped that the speculative builder will be induced to re-start building houses, and to do this he should be assisted by the Government in a similar way to that adopted by the National Housing Scheme. The old plan of assistance by private enterprise cannot, I am afraid, be revived. If the speculative builder could be assured of the market-value of the house, and with price of building materials and labour now becoming more stable, it would not be so difficult to do this, if it could be arranged for him to be induced to build. These temporary advances up to an amount of 60% should be obtainable through the Local Authority or Banks on the authority of the Government, which could take the risk in the same way as a private individual did before the War, and no money would be lost, because of the margin between the advance and the value of the house, 40%.

A fixed table of fees could be arranged for the surveyor and solicitor so that the builder would know the approximate charges on the property, and from experience gathered it should be so worked that 75% be paid by the builder and 25% by the Government. From a long experience in this town at any rate, I feel sure the housing question would be simplified and be more economical and practical in its solution, if the small builder could be revived on some such lines. It would encourage and revive the building trade: the industrious and speculative workers would again be induced to start building on their own account, and would give their best as they would know they would be working for themselves and their own gain.

Again, is it not possible to devise an attractive scheme which would enable a person without capital to purchase his or her house with the rent he or she pays? This may sound philanthropic, but I believe such schemes have been found to work well by Mutual Building Societies, and would appear to be in the best interests of the community. It certainly would be in the national interest, and even if there were any sacrifice of money entailed by the nation, the compensation in health and contentment would be greater and more far-reaching than by subsidising builders on the present lines.

By the introduction of new materials and methods of construction, and economical equipment.

These questions have been considered fully, I should say, by the Ministry, and where practicable have been adopted; but as to what extent they will influence the house building of the future, Time will show.

It is doubtful, however, whether the limited cubical space and the planning and method of building adopted for expediting the erection of dwellings may not have an adverse effect, and that such dwellings may become in the future the slums of the district.

Scheme of purchase between employers and employees.

Is it too complex a problem for Local Authorities, Tramway Committees or Companies, Railway Companies and other large employers of labour to build a certain number of houses according to the number of persons employed, and to induce their employees to purchase them, even if the purchase money has to be collected weekly? It is argued that such a scheme of tied houses would hamper the freedom of the employee, but at the same time it would stabilize labour and particularly the class of men whose livelihood and interests are identified with the locality.

In connection with the question of housing—

There is now before us a question almost, if not quite, as important as the provision of new houses, viz.: the question of renovations and repairs to existing dwellings occupied by the working classes.

In this Borough and, I have no doubt, the same applies in numbers of other towns, the smaller dwelling-houses are owned principally by small investors of the thrifty class who have only partly purchased houses with their savings. There are other small investors who in pre-war days were able by speculation to live wholly or partly on the equities.

The present-day conditions have changed this, and many of these two classes of owners have little or no means to keep their properties in a state of repair. Besides, the wear and tear is now much greater owing to the increased number of families per house. In this borough it was the exception twenty or thirty years ago, to find more than one working-class family in the house, but at the present day the reverse is the case. The remedy would appear to be for the Health Department to set up a Works' Department for cleansing and general repairs and renovations, and for the Authority to make a charge on the rent to recover the cost. Since 1914, the standard of cleanliness has certainly deteriorated, and a remedy must be found if the owners or occupiers are unable to maintain their properties in a cleanly condition.

Statutory powers have been given to Sanitary Authorities under the Public Health Act, 1875, Sections 23, 36, 41 and 62; the Public Health

(Amendment) Act 1890, Sections 25 45 and 49, and the Housing of the Working Classes Act, 1909, Section 15; but these powers have not been enforced except in a few of the larger districts where a special administrative department has been set up for the purpose.

Owing to the lack of capital as stated, and also to the Sanitary Authorities being sympathetic with the smaller property-owners in the exceptional times through which we have passed, general repairs and renovations have not been enforced, and sanitary administration has thereby become less effective.

If the Sanitary Authorities would but provide the necessary equipment under the Acts mentioned, I believe many owners would avail themselves of the opportunity to put their properties in a cleanly and sanitary condition. It would be possible to frame a general schedule of prices, and, efficient workmen being employed, there would be a saving of time on the part of the supervising staff of Inspectors. An objection may be raised as to the tendency to municipalize the industry of jobbing builders and decorators, and that the scheme has too much of the Socialistic character, but inasmuch as private enterprise has failed in its obligations to maintain good housing conditions for the working classes and that the charges made for repairs cannot be met under the prevailing conditions of rent, rates and taxes, it is reasonable for the Sanitary Authority to take such steps, and if the owners cannot or will not keep their properties in a cleanly and sanitary condition, then the Sanitary Authority will enforce the powers entrusted to them as guardians of the public health.

Whatever the cost of such guardianship and whatever the expenditure, there can be no question as to the comparative benefits accruing in the insurance to public health, contentment and happiness. The safety of the unit house is bound up with the safety of the town, and the community as a whole is responsible for the health of the whole.

The dirty tenant must be dealt with. The elaborate schemes of modern housing, the sweeping away of slum areas, and the enforcement of ideal public health administration will be of no permanent benefit unless cleanliness is observed by the individual householder. The present powers for dealing with the dirty tenant are insufficient, and additional legislative measures to deal promptly and effectually with them are overdue.

The provisions of the Public Health Acts of Scotland provide for such enforcement, and I fail to see why similar prompt and effectual powers should not be granted to the Inspectorate in England. If owners are to be compelled to keep houses in all respects fit for occupation, then tenants should have equal liability for reasonable care of them, and should not be permitted to damage and foul that which is provided for their comfort and benefit.

For these reasons, I submit that we should urge our local authorities to adopt Repair and Improvement Departments for the execution of works of repair and improvement of houses as part of our sanitary administrative department.

The old saying " There is no place like Home " has a singularly happy meaning when it is applied to health, and the benefits which spring from health, radiating goodness and happiness. Ministers of state, philanthropists and Public Health officials may labour their lives out, and still do little service until they can secure that each house, however small it may be, is included in their plan of work. The river of national health must rise from the homes of the nation. The home is a national asset, and we undoubtedly stand or fall by home life.

The scope of our duties in the Public Health Services as Inspectors is ever increasing, and the question which I now propose to refer to, viz. : that of *Street Trading*, may not come within the province of every inspector. There are, however, many inspectors, particularly those who are responsible for the supervision of the food supplies within their districts, who are required to have a knowledge of the various forms of street trading, and its influence on the communal life of our cities and towns. Moreover, it behoves us all to keep abreast of the social legislative measures which may be required for the betterment of our thickly populated centres, and which directly or indirectly affect or influence the public health.

A Sanitary Inspector is required in these days to carry out a much wider scope of duties than the mere removal of nuisances and questions of drainage and sanitary fittings. The dangers arising from defects in these matters were of course of vital importance thirty or forty years ago. They are still important and, as before stated, cleanliness is still as good a watchword as ever it was. The intelligent public have, however, been taught to realize the importance of good drainage and sanitation, and that the existence of filth and offensive nuisances is a real menace to health. The broad principles of sanitation having been advocated and accepted generally, our duties in this respect are comparatively easy of accomplishment to what they were.

Recent legislation now deals more with complex and indirect health questions, and the subject of street trading is one which has given the State and local authorities many difficult problems to solve. I therefore thought it desirable to bring the subject to your notice. It is a system of trading which is greatly on the increase, and for which legislative measures will in the near future have to be framed, in order that it may be effectively regulated and controlled.

Under Section 13 of the Employment of Children Act, 1903, the definition " Street Trading " includes the hawking of newspapers, matches, flowers

and other articles; playing, singing or performing for profit or any other like occupation carried on in the streets or public places.

Since 1840, the plan of rating has been according to the occupancy of land and houses. This system often enforces on retail traders, as a class, an undue proportion of local taxation, as, from the special local circumstances, and the nature of their business, they are often compelled to occupy premises of high rateable value in the more important thoroughfares and centres. It has been argued that such retailers can demand higher prices from their better class of customers, and, by this means, taxation is levelled and proportionately shared by all.

But in practice, this is not so. Certain trades, such as house furnishers, ironmongers, motor depôts, must of necessity occupy larger premises than jewellers, tailors and chemists, and yet the profits of such traders as the latter, dealing in smaller articles, are frequently greater. In certain cases it follows, therefore, that because the trader deals in larger articles, he must pay large rates. Again, there are market area sellers, street sellers and hawkers engaged in street trading in the most frequented, popular and therefore highly-rated thoroughfares and business centres, who take advantage of the best pitches, and filch the trade from the shopkeeper, who is equitably entitled to such trade by the right and virtue of true citizenship.

These street traders can move with the moving crowd, or trade in the richest neighbourhood. Many instances can, no doubt, be called to mind in large provincial towns, as well as in the largest cities, of this unfair and inequitable state of things. It is only right and just to the shopkeepers, bearing taxation, rating and other responsibilities, that such competitive street traders should be licensed by the Local Authority, and, at any rate, bear a small share of the responsibility of citizenship. Again, the street trader, with a small basket or barrow and at a good stand, trades on the public sympathy. This sympathy is often misplaced, for numerous cases can be quoted where the turnover of the street trader is greater than that of the local tradesman in the shop close by.

Again, in the crowded centres of our large towns, the occupations of young street traders in hawking matches and newspapers, has become a real evil, and there can be no doubt that the effect of such upon the character and habits is disastrous, exposed as they are to the worst of moral risks, and producing a dislike as well as a disability for regular employment.

Communal dangers of Street Trading.—The general Coster in most of the large towns is generally speaking a genuine and hardworking person; the occupation is often an hereditary one, and the work and life are thoroughly understood from childhood. The goods he sells may not be of the best, but as a rule, they are sound and fit for food.

There is, however, quite a different class of men claiming to be costers, who, having lost their good name and being unable to obtain work, hawk goods in the streets; their only chance of earning a living. This class of casual hawkers, who buy fruit and vegetables known as "throw outs" from the wholesale merchant or middleman, is the danger to the public, and is the class which causes the Food Inspector so much trouble and anxiety. The Food Supplies are usually purchased in bulk and are often just in the decomposing stages; the goods are "topped" by the best, and then sold to the undiscerning housewife. Should he be unsuccessful in disposing of such goods during the day, the unsold portion is stored in undesirable places until the next day. In the interests of the public health, there can be no doubt that the itinerant hawker of food supplies for human consumption should be licensed, and it should also be compulsory for the licensee to register his address. The wholesale merchant or middleman should be made responsible for the sale of goods to the hawkers, and the 'picking over' or 'sorting' should not be left to the latter. Under Section 28 of the Public Health (Amendment) Act, 1890, action can be taken, and if this fact be pointed out to the wholesaler, and he is made responsible for such 'picking over' or 'sorting,' there is much less chance of unfit food being put on the streets for sale.

There is also another danger in the sale of food supplies in the streets which is not always realized. In these days of motor and vehicular traffic, clouds of dust are raised, consisting of all kinds of desiccated street refuse. The food supplies are deposited on uncovered stalls or conveyed in open hand barrows, and the articles are in consequence covered with this objectionable dust. It should be a condition to granting the licence that a proper and approved form of stall or barrow should be used, so as to minimise the contamination of the articles exposed for sale.

Suggested restrictions for Street Trading.—

(1) That all persons who shall be deemed fit and proper persons to be engaged in street trading shall be licensed by the local authority, and on such licence shall appear the full name and address of the licensee. The local authority shall be entitled to charge a fee, and the licence shall be renewed annually.

(2) The licence shall be restricted to groups of kindred trades and so shall not be allowed to include all trades, and no persons shall be allowed to hold more than one licence.

(3) Each licensee shall wear or carry a badge (corresponding with the issue of the licence) and both the licence and the badge shall be suspended or revoked by the local authority on the order of the magistrates on conviction for special offences.

(4) The local authority shall also be empowered to deal with hawkers' and pedlars' licences (Acts 1871 and 1888 respectively) within the area of its own borough or district.

Such restrictions would assist the men who are really desirous of earning their living honestly, and the loafer and undesirable person who trades on the street to pick up a precarious livelihood by hook or by crook would be clearly recognized by the local authorities, and his conduct be better regulated and controlled when dealing with food supplies.

Street trading and hawking of food supplies, as I have previously stated, are greatly on the increase in a number of towns, and the question is one demanding consideration and reform. I therefore ask you to help forward this reform, and, if you find it necessary in the special sphere of your work as an Inspector, to interest yourself and your authority in the questions involved. The sphere of the State and Municipality will be extended only as public opinion demands, and the right limits will then be ascertained and controlled accordingly.

In conclusion, may I say a few words to the younger men in our ranks.

In the early days of my career as an inspector, the topical questions for the Inspectorate were: the Inspector's status, his tenure of office, the relative positions of the Medical Officer of Health and the Inspector, and Superannuation.

Well, the first three have now been definitely settled. The settlement of the fourth seems to be within the range of possibility.

There may be differences of opinion arising as to the status of an inspector, but after all, if the Inspector will only make himself thoroughly competent and keep abreast of the time, and be conscientious in the discharge of his duties in protecting and maintaining the factors which make for healthy environment of his fellow townsmen, and carry out his duties fearlessly and without favour, I believe that the municipal governing bodies and the general public, with their increased general knowledge of public health, will generally support and give sympathetic consideration to the Inspector as an executive officer.

We must be prepared to give reasons for the confidence we desire; must acquire a thorough knowledge of the special details in our districts; and be enthusiastic in the amelioration of adverse circumstances; and, if we are true to our mission, we shall get what we want.

We must make ourselves so useful that our Authorities can depend upon us, and we shall find that we have secured their confidence and support.

The Medical Officer, with his special training and knowledge in sanitary science, particularly with regard to causation and prevention of disease, medicine, and physiological phenomena, should be the administrator, and the Inspector, the executive officer of such administration. Neither can nor

should attempt to dispense with the services of the other. The Medical Officer who attempts to assume the dual position will neither add to his dignity as a professional adviser, nor will his department carry out so satisfactorily the sanitary administration of the Authority.

We older Inspectors can appreciate the advantages we have received from the efforts of the Royal Sanitary Institute, under whose auspices we are now assembled, for the improvement effected in the Public Health services and status of the Inspector through the effects of its examinations and also by the collecting and imparting of information on all matters connected with public hygiene.

I venture to suggest, however, that the time has now come when the mere qualification of having passed a theoretical examination is not sufficient for the present day inspectorate, nor does it now fulfil the demands made by the general public. As I have said, the Inspector must of necessity be an executive officer ; he should therefore be qualified for his position by practice.

The number of young men now being trained in the Health Departments of our larger boroughs will be sufficient to meet the demand for the supply of Inspectors for years to come, and a higher standard of ability can now be demanded.

The recent order of the Ministry requiring that the Inspector shall be fully qualified, no matter how small or unimportant the district may be, is an important step in the right direction, for the village of this decade may be the important town of the next, and a neglected district without efficient official equipment in these days of intercommunication may be a source of danger to larger districts, or even to the nation at large.

As you know, the Ministry has now officially recognized the qualifying examination of the Royal Sanitary Institute for the Inspector, and we Inspectors, realizing the advantages extended to us in the past, are hopeful that in the future the Council will elect qualified representatives from the Inspectorate on the Board of Examiners. This is customary in many Associations, such as the Veterinary Surgeons', Dentists', and the Midwives' Boards, etc. That the Inspectorate can furnish examiners thoroughly competent in every respect and such as could be capable of acting in this capacity, exercising both technical and practical knowledge, cannot be gainsaid. Such appointments would secure greater confidence among the Inspectorate, and remove any doubts as to placing the Council of the Royal Sanitary Institute in a monopolizing position ; a most undesirable position from every point of view.

By so doing, I believe it would be an incentive to all and would still further extend the Institute's sphere of usefulness to executive officials engaged in the Public Health Services.

Smoke Abatement, by ALEC LONGFELLOW, Chief Sanitary Inspector, Rowley Regis Urban District. (ASSOCIATE.)

(ABSTRACT.)

THE Smoke nuisance has always been a problem. Minor attempts of legislation have been made, but nothing serious was attempted until the Public Health Act, 1875, became law. This is evidently incomplete, as will be seen by the depredations which still continue.

Smoke emission is unsound. When Coal is put in a furnace, gases are distilled therefrom. These gases are Hydro Carbons, and consist of Carbon and Hydrogen as their name denotes. They are in various compounds, the chief of them forming an affinity of Carburetted Hydrogen, CH_4, and Bi-Carburetted Hydrogen, C_2H_4.

These gases or smoke should under proper conditions produce flame and heat, and consequently are a financial loss.

Good combustion depends upon two things: (1) Oxygen and (2) sufficiency of heat in the furnace. One without the other results in smoke and calorific loss.

Theoretically, one pound of Bituminous Coal requires 150 cubic feet of air for the required amount of oxygen for its combustion. In practice double this amount is allowed. In good combustion the carbon of the fuel should burn into CO_2 whilst the hydrogen should combine and result in H_2O.

The hydro-carbons of "gassy" coal are given off at about 1,000° F. but about 2,500° F. is required for efficient combustion. It is as necessary therefore to maintain constant heat in the furnace as it is to supply the requisite quantity of oxygen.

To test combustion efficiency, flue gas samples are taken and subjected to chemical tests. Ordinary atmosphere consists roughly of 21 per cent. of oxygen, and with perfect combustion this should be replaced by 21 per cent. of Carbon di Oxide (CO_2). Therefore tests are made for the amount of CO_2 in the flue gases, and the nearer to 21 per cent. the greater the efficiency. 12 to 15 per cent. CO_2 in the flue is considered very good.

Three kinds of Coal are used in England: (1) Bituminous or gassy Coal (2) Steam Coal. Less gassy. (3) Anthracite. Considered smokeless.

Smoke is injurious to health and vegetation. The soot chokes up the pores of the plant and prevents assimilation of the necessary CO_2.

Soot being absorbent retains acids such as Sulphurous Acid and Ammonium Sulphide, and it is this which causes the disintegrating action upon buildings. Once disintegration starts the progress is rapid. Smoke Clouds cut out sunlight, which action is detrimental.

Can Smoke be prevented?

It can be considerably lessened. In burning gassy Coal I advocate a thin film of smoke at the chimney top.

No Smoke may mean a starved fire.

The domestic Chimneys are the greatest nuisance as they exude into the atmosphere the tarry compounds of the Coal.

Gas and Electricity should be encouraged where possible.

The present law administration is not effective. It is overlooked.

The phraseology of the word "Black" relating to smoke should be altered owing to the difficulty of proving an offence. Other colours should be included too.

Smoke Abatement, by CHARLES HY. NORTON, Sanitary Inspector, Middleton.

(ABSTRACT.)

FOR a long number of years the discharge of coal smoke into the atmosphere has occupied the attention of the Royal Sanitary Institute and other bodies, but up to the present very little has been done to remedy the nuisance.

The Departmental Committee have made their final report and amongst their suggestions are the following, viz., That the County Councils and Councils of County Boroughs be the authorities for administering this portion of the Public Health Act, that the penalties be increased, and that the expense of making alterations to plant be taken into consideration.

The transfer of duties will probably meet with some opposition, but this is necessary if there is to be uniformity of action taken, and it would be as well if County Councils were the authority for the whole of the geographical county. Increased penalties will be useless if the Act is administered in the same perfunctory manner as at present. If expense of alterations is to be taken into consideration, then some kind of tribunal will have to be arranged, for in many instances the owners of mills will argue that the expenses of the alteration required are too costly.

At present the powers for dealing with black smoke are contained in Section 91 of the Public Health Act, 1875, and had this power been taken advantage of in every district and put into operation as intended, then there would have been no need for enquiry into the cause and abatement of black smoke. A district may use all its available powers and still suffer from the lax adminstration of its neighbours.

If less industrial smoke is to be made, then boiler power must be equal to the work required of it. Where the draught is not sufficient then induced draught can be installed. The coal should be of good quality, and the

fireman should be careful, for if he fires heavily, black smoke is made, whilst by firing lightly and often he will use less coal and make less black smoke.

The mechanical stoker is very useful for keeping down the black smoke and has met with some success. This arrangement, coupled with an induced draught, is in operation at the works and mills of Mr. A. G. C. Harvey at Littleborough, and this gentleman claims that no black smoke has been emitted from the chimneys of his mills or works for fifteen years.

Another apparatus for reducing black smoke, is admitting air at the bridge wall, but my experience has been that this system leaves much to be desired. The most efficient and the cheapest apparatus of this kind is one which consists of two tubes which pass underneath the fire bars and through the bridge wall, where they are turned upwards and inwards and meet the smoke as it comes over the bridge.

Coal smoke can and ought to be reduced, but it will be necessary for the Act to be administered in every district, and the time limit, which should not exceed two minutes emission of black smoke per half-hour, should be fixed by the Ministry of Health.

So long as coal is used for generating heat, more or less smoke will be made, and the best solution will be when electricity can be sold at such a price that it will be cheaper than steam for driving mills and works, and some day it may be more economical for domestic use.

Food Supplies—A Few Random Notes on the Difficulties of Control, by E. Carratt, Chief Sanitary Inspector, Bristol. (Member.)

(Abstract).

THE importance of safeguarding our food supply is realised by every Sanitary Inspector, though some officers have only a small section of the responsibility. As the matter affects all of us directly, it is advisable to keep before us certain factors which operate in producing obstacles to the satisfactory administration of the laws controlling our duties.

Sale of Food and Drugs Acts.

These Acts, with their numerous Orders and Regulations, have been of considerable value in protecting the consumer from the results of sophistication, but the anomalies they include, together with the conflicting decisions of Magisterial and Higher Courts upon identical cases, now emphasises the need for their thorough revision and consolidation.

As the scope of this paper is necessarily limited it will be sufficient to direct special attention to one or two points which really need some definite legislation thereon. These are :—

The use of preservatives.
The need for proper standards.
Warranties under the Sale of Food and Drugs Act.
Perishable food stuffs.

The need for the use of chemical preservatives in the preparation of food is one upon which many opinions have been expressed. That danger to some constitutions exists in the use of food containing such preservatives, has been proved by medical evidence, yet the practice still persists.

Cream is the only article of food to which a permissive amount of preservative may be added, but even the regulations made by the Local Government Board under the Public Health (Regulations as to Food) Act, 1907, leave the question of the wisdom of this permission still in doubt.

It is time that some definite pronouncement on this question was issued by the Ministry of Health. If preservatives are prohibited in milk, their use should not be allowed in cream.

The use of chemical preservatives in other foods and beverages is also attended with probable danger to the consumer.

Legal standards and not recommendations should be set up for the control of all food produced by manufacture or in the process of preparation of which ingredients are used which are themselves liable to contain impurities. Baking powder : the limit of calcium sulphate should be fixed ; cream of tartar should be the subject of a legal limit of the amount of lead present, are quoted as illustrations.

Legal standards of the composition of infants' and invalids' foods are essential, as some of those on the market are not adapted for either infants or invalids. Being unsuitable they are therefore insufficient, and the result of their use means want of stamina and power to resist ordinary ailments of life.

Misleading Labels.

Some definite action is required in respect of the sale of food articles bearing labels improperly conveying an impression that the article is something more than it is.

The extravagant claims with regard to the nutritious properties of some egg powders and custard powders are instances of this need.

The preparation of synthetic fruit syrups from phosphoric and salicylic acids, which are sold in substitution for syrups properly made from fruit juices should be controlled by the fixing of a limit of these drugs which can safely be used, and it should be compulsory to state the amount contained, on the labels attached to the bottles.

The warranty defence has long been one of the bugbears of the Food Inspector, and it is time that all the provisions as to warranty defences

were repealed. At a Conference in Battersea last year, a strong expression of opinion was sent to the Government to the effect that the provisions of the Sale of Food and Drugs Acts, 1875-1907, with regard to such defences (and especially in the case of milk), operate to the prejudice of the purchaser and the Public Health, that this state of things has become a public scandal, defeats the objects of those Acts and causes their administration to be a useless expenditure of public monies.

The provision of Public Abattoirs and the abolition of private slaughter-houses, is admitted on every hand to be one of the vital essentials of the proper and complete supervision of food supplies, and though amply supported by the recent Departmental Commission, it does not appear likely that any really practical steps will be taken in the near future to bring this important reform into effect. Still, some of us have hopes that a progressive Government may arise which will have the courage to consider the essentials of good health before economy, and thus institute reforms long needed. Until the Public Abattoir becomes general, the system of centralising slaughtering in fewer slaughterhouses might continue, but it will be necessary for the government or local authorities to have powers to insist upon this. Even if such an arrangement can be re-introduced (it worked well enough during the period of control) we shall need powers to enforce the establishment of clearing houses through which all meat must pass before exposure for sale. Without some such institution, the people in areas where inspection is keen will be still exposed to the risk of being able to buy meat which has been killed in areas where little or no inspection is carried out.

The need for registration of all premises used for the storage and sale of meat and meat products, has been recognised by the Departmental Committee.

Proper construction with a view to sanitary cleanliness in all respects, is an essential principle to be pushed as far as we can possibly push it, and it is hoped that before very long we shall have some standard regulations for the control of these places, as well as with respect to the handling and transit of meat and perishable foods. Hawking meat in the streets and selling from open stalls, which appears to be on the increase in some districts, should be prohibited.

One section of the report has received, as it deserved, justifiable criticism from Sanitary Inspectors throughout the country, and as some members of the veterinary profession have frequently emphasized at these Congresses, their opinion that the work of meat inspection should be in the hands of veterinary officers, it is, I think, fitting to express reasons why such an arrangement would neither be efficient or economical. As there are few authorities who employ whole-time veterinary surgeons, those who do not will not be

inclined to incur the expense of doing so, and moreover, in rural districts, it will scarcely be possible in the case of a joint appointment by several authorities for such an officer to do any more, if as much, as the Sanitary Inspector can do. With a part-time appointment, the services of a veterinary officer could not be so promptly available as is requisite, and there is also the important fact that his official work would be likely to conflict with the interests of private professional practice.

We are all of course opposed to the recommendation that a modified form of examination should be instituted for butcher candidates. I say this without prejudice of any sort to the members of the trade, but is there any real reason why they should be especially provided for? It would be better to restrict the examination to candidates already holding office as sanitary inspectors.

Slums and Slum Life, by H. W. Bladon, Chief Sanitary Inspector, Weston-Super-Mare (late a Supervising Inspector, Birmingham).

SLUMS and Slum Life present problems as difficult as any with which Public Health Workers have to deal, and which must be faced without bias.

Slums have grown into existence with the aggregation of people in large centres following general industrial development. Thus the responsibility for their existence is one that we all share.

The immediate post-war enthusiasm for housing has passed away and the Housing Committees of largely populated centres are wondering what they shall do with the hundreds of acres variously coloured on the map for the purposes of Form D 89.

Owing to the cumulative pre-war house shortage, the cessation of house building during the War, and conditions as we find them to-day, the practical stoppage of the building of new houses for wage and lower salaried workers can only be temporary.

Public health workers have welcomed the cessation of building at the ridiculously inflated prices which have prevailed as tending to bring about that stability which is necessary before permanent progress can be made. The trouble appears to be almost wholly economic.

Under the present circumstances it seems hopeless to attempt to deal

adequately with the large blocks of property which, especially in older towns, are often so badly arranged and structurally defective that nothing short of demolition is desirable. It will only be possible to do this when a sufficient number of new houses have been provided. In the meantime it will generally be possible only to patch up the old stuff, otherwise by injudicious action we may extend the life of undesirable dwellings for an indefinite time.

Local Authorities are placed in a difficult position. If they ask for extensive repairs, the owner may want to close. Pending the time when we can take normal action under the Housing Acts, it seems advisable to proceed informally or under the Public Health Acts and so avoid bringing properties within the scope of the voluntary closure clauses. It will, however, be found necessary in many cases to supplement this procedure by a strong application of the repair Sections of the Housing Acts.

Provided the necessary powers were made available Local Authorities would be well advised to apply Town Planning principles to their built up areas. In this way, our large cities especially would be benefited, slum areas improved, and potential areas prevented from developing into slums.

Having regard to the shortage of skilled operatives and while pushing on with their New Housing Programme, the time limit fixed by the Government for dealing with Part 2 Schemes is inadequate.

If in the future it is found to be impossible for public or private enterprise to erect houses for workers at economic rents, then it will be imperative for the Government to seriously consider the continuance of their Grants or Subsidies. Failing this, there would appear to be no hope of dealing with existing slums, and our poorer population would have to be housed in tenement rooms and new sheds and hovels. In fact, as regards housing, our country must fall to the level of some of the poorer Continental nations.

It is not desirable that decent young married couples or families should live in one or two rooms, encouraging artificial restriction of the family in the first case, and in the latter, overcrowding and mixing of the sexes with their attendant evils.

This is the manner in which people are becoming "absorbed," and providing the loophole for the argument of a type of economist who alleges that the estimates of Housing Needs made by Local Authorities are greatly exaggerated. There has in some cases been excessive estimation but generally speaking the figures were very carefully checked before their submission.

Let the Government economise by all means but they should be urged not to lose sight of the fact that there is still a great shortage of accommoda-

tion and that any undue delay in providing new houses will necessarily delay the time when we shall be able to deal adequately with slum areas.

When this time does arrive it will be necessary to discriminate in placing the dispossessed tenants. That destructive dirty and indolent class, which will be referred to later, could be housed in a dwelling where, while they will have a home and provisions for their comfort, they should be subjected to supervision and be liable to penalties should they indulge in dirty or obnoxious behaviour. Easy going with these people will not pay. While they will improve with better environment, it will not do to neglect the coercive and educational effect of punishment following their unsocial acts.

The incidence of the factors tending to produce and perpetuate the *Slum Dweller* as a class will be largely governed by temperament and economic position. For convenience I group these under the following headings :—

Poverty, environment and training, improvidence and drink, temperament and heredity.

Poverty for certain definite reasons is a primary factor. It compels the subject to live under certain adverse conditions. His house will often be cheap, nasty, and have the scantiest accommodation. Poverty will also govern the furnishing of the home. Obviously the poorer woman has a correspondingly greater task in keeping her house in an orderly manner and her family healthy and clean than has the woman who can afford a better equipped house and more plentiful and better food.

Poverty is much too big a subject to be dealt with here. It is, however, often decisive because it compels a great number of the poorer workers to live under bad *environmental conditions* and their children to be subject to bad *training*.

For the family with a reasonable income and proper facilities, it is not difficult to maintain a high standard of family life. This is not usual with the slum-dwellers, handicapped as they are by lack of proper conveniences. In appearance slum houses are almost invariably mean and unattractive, and large numbers, especially of the back-to-back type, situated as they are in courtyards, have no privacy whatever. The sanitary conveniences are almost invariably used in common in the case of courtyards. The maintenance of these conveniences in a cleanly condition presents difficulties and one bad tenant will quickly demoralise the tenants in a group of houses, and what is a common duty becomes no one's job. Another important point, is the bad educational and moral effect on the children. Then again there is the difficulty presented by the use of a common privy by a person notoriously diseased. Each knows the other's business. There is no privacy whatever. The sanitary convenience used in common is one of the most

degrading features in slum life and one of the strongest influences tending to make dirty tenants.

Children brought up in a bad group of houses will regard squalor as a normal condition, in fact their training and environment will turn them out much as the people with whom they have been in contact. Under these conditions the slum child grows up with a limited outlook, perverted ideas and an undesirable precocity. Can we therefore look for the abolition of the dirty tenant slum dweller as long as slums exist, and can we wonder at their degraded condition ?

The *Improvidence* of these people is so obvious and associated with home training that little further need be said about it. Alcoholism accompanied as it so often is by neglected home conditions and improper and insufficient feeding, has a very potent influence upon public health, and excessive drinking and bad housing act and re-act upon one another to a great extent.

Heredity also has its effect. There are certain transmissible characteristics of a like nature with racial and industrial traits which have probably acted with the passing of time in shaping slum life. The hereditarily inefficient, mental and physical, will probably with time, gravitate to the slums. The better off of these types live a more sheltered life than does the slum prototype. The well to do feeble-minded are possibly glossed over while the poorer cases are no doubt worsened by bad home conditions and poverty. At the extreme the number of persons so mentally deficient as to be incapable of keeping their homes tidy, are so small as to be negligible.

Mentality.—Observe the habits of children in a family. One may be methodical and tidy, while another in spite of correction and punishment is innately untidy. In large offices and workshops the same conditions will be noted. One worker, apart from efficiency, will be neater and tidier than his neighbour. Can it be urged that these temperamentally untidy persons are undesirable citizens ? Broadly speaking, I think not, but if you put these persons as children under slum conditions you will find them growing up to be what are known to us as Dirty Tenants. This class of people, given good home conditions, will generally make quite good citizens.

How shall we deal with the slum-dweller ? While facilities should be within reach of the bad type of slum-dweller for the improvement of his condition, the means of coercion and punishment must not be neglected. The children growing up in the slums must be made to see that pressure is brought to bear on people who are habitually dirty. The law for dealing with dirty tenants is very defective, especially so with regard to common yards. Better administrative facilities should be given to Sanitary Inspectors to deal with them. The persistently dirty slummer should be brought

within the scope of suitable bye-laws, by means of which we could go for the defaulters and so obviate the devious legal processes now at our disposal.

Bad working conditions in many of our factories and workshops have, in the past, had a baneful effect on the morale of the workers and life in the home and they need improvement.

Tradition plays no little part in the general outlook of all classes of society, and in the lower labouring classes as much as any. Lack of a sense of responsibility seems to be one of their great disabilities. Religious, social and industrial agencies such as the Co-operative movement and the Trade Union Organisations co-operate in aiding these workers to improvement, self-confidence and the necessary sense of responsibility.

It is to education, broadly speaking, that we must look for the elimination of the slum dweller as a type, but so long as sordid environmental conditions exist, the active and latent temperamental leanings in a certain proportion of our population will still produce slums and so long will these people be a blot on our social life and render educational and public health effort to a certain extent useless.

I summarise the influences which will help to abolish slumdom under the following headings :—

The provision of a sufficient number of new houses : pending this, the patching up, and repair of existing repairable and dilapidated property.

Reconstruction of slum areas after the new houses are provided.

Town Planning, including the Town Planning of built up areas.

Payment of living wage to all workers.

Education in Citizenship, Hygiene, House and Mothercraft.

Punishment of Dirty tenants.

Promotion of thrift.

Improved factory and workshop conditions.

Continued Licensing reform.

Medical inspection of school children, including the establishment of a sufficient number of School Clinics and Infant Welfare Centres, and the provision of powers to provide for, or to insist on, the treatment of defects found.

In conclusion, in spite of the set back housing has lately received, the publicity given has prepared public opinion for the reforms that are bound to come in order to clear out the blot of Slums.

CONGRESS AT BOURNEMOUTH.

CONFERENCE VI. HEALTH VISITORS.

Presidential Address, by Professor A. Bostock Hill, M.Sc., M.D., D.P.H. (Fellow).

(résumé).

PROFESSOR Bostock Hill proceeded to a survey of the present position of this branch of the Public Health Service, which he emphatically pronounced to be of very considerable importance and value to the community. Everyone interested in this work was at the moment watching with some anxiety the efforts which were being made in divers directions to standardise the training of women seeking to enter the service. The earliest attempt was made by the Royal Sanitary Institute, which instituted the first examination for Health Visitors in 1908.

In 1919 the Board of Education set out requirements with regard to the training and qualifications of Health Visitors, and arranged for the granting of certificates which the Ministry of Health stated would be necessary for appointments requiring Government sanction and grant, after a date to be prescribed. This action on the part of the Ministry has not, however, proved entirely successful, for it has not up to the present resulted in the supply of a sufficient number of trained women. In October, 1921, a Joint Conference of Medical Officers of Health and the Royal Sanitary Institute was held and in December the Report of the Conference was published and sent to the Ministry of Health, but beyond an acknowledgment no action has been taken.

Some consternation has been felt by the circulation (July 1922) among Local Authorities of a further Memorandum on the Training of Health Visitors, a document which dispenses temporarily with certain qualifications previously laid down, and is to that extent reactionary. Moreover, it approves of the employment in rural districts of District Nurses as Health Visitors, obviously for motives of economy, surely a false economy as could be clearly shown by a careful consideration of the practical duties appertaining to the respective offices.

He then spoke of the developments of the work since its inception (additional duties include, *e.g.*, the Inspection of Midwives, of School Children, Tuberculosis, Home Visiting and Dispensary work, etc.), and

emphasised the necessity of a very high standard of equipment for such work. He did not consider on the one hand that the High School girl of 21, who has just completed her 2 years' training under the Ministry of Health Scheme, was fully fitted for the duties nor, on the other hand, was the mere training of a sick nurse a suitable or complete equipment. The hospital trained nurse has autocratic ideas as to the control of patients, invaluable in the sick room, but utterly out of place in the preventive atmosphere. Her function is primarily to *cure*. He would advocate that the qualifications should include :—

A Midwifery Certificate.

A period of probation in a Public Health Department before being appointed to a responsible post as Health Visitor.

In summing up, he hoped that no remarks of his would be construed as depreciatory of the Nursing Profession, for no one esteemed the value of the Nurse more highly. What he wished to make clear was that while her training and experience were most useful as a basic qualification, it was necessary to supplement that training very considerably before she could be fitted for the duties of a Health Visitor. When the present wave of economy (or parsimony) should have passed, the outlook of the Health Visitor would materially improve and he cordially hoped that she would ere long receive the reward that was due to her work. He considered that her place in the Scheme of Public Health Work was an honourable and a most important one.

Public Health Propaganda Work.

By Miss H. S. Cooper Hodgson, Superintendent of Health Visitors, Durham C.C. (Associate).

YOU could not imagine a social reform of greater magnitude than for all the people of this realm to suddenly acquire a fondness for fresh cool moving air in their homes.

How much ill-health and misery result from ignorance of the simple rules of health, more especially among those condemned for the present to live in bad houses? We know these unfortunate people have a very poor chance, because of their homes. Where, for example, is the bulk of the human tuberculosis notified from? And we also know the powers-that-be have decided that re-housing must stand still for the present on account of the financial position. Our best hope is to teach the people to save themselves. The matter is vital and urgent, not least because of the present high price of food. When food *is* cheap the badly housed, who usually need to spend the greater part of their income on food, have a chance of being sufficiently fed. *When food is dear they are mostly underfed.* The combination of bad housing and underfeeding is deadly, and there is some reason to believe that tuberculosis will claim more victims instead of fewer, despite our expenditure on treatment.

Dental disease is another grave evil. Taking the country as a whole, we are utterly unable to cope with the condition. There are not nearly enough qualified dentists, and if there were the people who most need their services are largely unable to pay the fees.

Again, our best hope lies in showing folk how to prevent the disease. Why should our permanent teeth (how all ill-named in these latter days) desert us after a few years? It is to be supposed that Nature intended our teeth to be as permanent as, barring accidents, are our legs. And yet the nation remains for the most part unmoved while millions of its teeth rot, and are removed (or not removed).

Unfortunately, most of us have our noses firmly to the foundation stone of routine work, which *must be attended to.* All too seldom do we break away from our "usuals," and, appalled at the destruction wrought by ignorance, we come out into the open and say, "The people *must* know, somehow or other, they *must* be taught."

Of course teaching is going on all the time, in the schools, and in the homes, but it has all been said so many times in the same way. *How to get life into it? Health Week is a great annual opportunity,* and we should all make the most of it.

Attractive popular speakers on health matters are rare, which perhaps accounts for the paucity of audiences at some health meetings.

This is partly because public speaking is often not taught to public health folk ; it is expected to come by nature. More of *the people who know must* be able and willing to talk interestingly on a platform.

Wages are low, and likely to remain so. Isn't it a tragedy, where pence are scarce, to see so many of them wasted ?

Our job is to teach the art of living. First : Teach people to make the best of the kind of house they can get, bad though it be, to keep windows open, and do away with blinds and curtains excluding sun and light. Second : To be sane about refuse disposal, to keep closets, wet or dry, ashpits, dust bins, and backyards in a wholesome condition. Third : To keep their bodies in a wholesome state, both inside and out. Fourth : To spend wisely whatever income they have. Fifth : What recreation means.

There are many movements for giving an uplift to the spare time occupations of the cottage dwellers ; folk dancing and singing, choral music and singing, folk plays, games, the revival of handicrafts, and so on, and the Boy Scout and Girl Guide movements.

All far-seeing health workers support these movements, for in them lie the seeds of a great harvest of human happiness. There is allotted to most of us a tiny store of food and clothing and housing, but I doubt if we get much of the joy of living unless we make it ourselves by the careful cultivation of such talents as have been given us. Coming out of our homes, in our own time, of our own free will, and making something of beauty, be it of speech, song, music, or motion, for the common pleasure.

Every honest craftswoman secretly thinks her own job the most important, and I have an enormous faith in the possibilities of the Public Health Department, as an agent of vast social reforms. We believe that without the passing of another Act of Parliament, or the expenditure of a single additional penny of public money the health and happiness of our cottage dwellers can be vastly improved by their being brought to the knowledge and practice of the things belonging to their health.

Great are the uses of advertisement. The wizards of Patent Medicinedom have taught us something. Let us take a leaf from their book, and *advertise.*

Why not occasionally take the front page of an important newspaper and fill it with the description, written and illustrated by master hands, of how a family in a mean street learned the value of fresh air in the home, and what a wonderful difference it made in their lives ; of how the father *did not get* pulmonary tuberculosis and die prematurely, leaving widow and children to scrub along under the Poor Law ; and how Cissie and Bobbie

escaped broncho pneumonia after measles and grew up sturdy citizens, able to hold their own in life.

Another time the page might bear a picture, also drawn by a master hand, of some wholesome recreation in the open air, men, women, and children together, not men alone, pigeon-holed in rows on a football grand-stand, or in a stuffy public-house or a club, with the women and children left behind in dull narrow streets. These advertisements should appear on hoardings as well as in newspapers, and they should be the only kind of advertisements permitted on sky signs.

Then each Health Department should run a Welfare Journal which pays its way. This is done in the County of Durham. The journal should contain popularly written articles on health matters, not forgetting statistics, a correspondence column, and competitions.

Remember, *the only health literature read by the majority of the dwellers in the little back streets, those scenes of perpetual searing tragedies of premature death, is patent medicine advertisements.*

Occasional historical pageants would be good. Every place has some sort of history; and history, and geography and public health work are closely related. The Black Death is a corroding memory, but we still have the White Plague, tuberculosis, slaying its thousands, and far more of a disgrace to us with our twentieth century knowledge than the ancient horror to the dwellers in those far-off days.

Welfare Exhibitions are useful; 1922 is the fifth year for the County Durham Travelling Welfare Exhibition, which visits from 20 to 30 towns and villages each summer, travelling round by motor ambulance. The Exhibition includes about 150 posters, literature for sale, model clothing for infants, model clothing for children, edu-craft garments, facts about food for people of all ages, economy ideas, household hints, training material for mental defectives. There are eight large wooden screens, with properly fitting draperies of soft green and brown, which make a splendid background for the posters and exhibits. The tables are provided locally, the screens being designed to fit round an ordinary kitchen table, of which a number can usually be borrowed.

The posters deserve a word of explanation. Some of them were obtained from the Baby Week Council and other similar sources, including "Advice about Teeth," "Clean Milk Propaganda," and the Ling Posture Posters. The remainder are specially designed: many of them relate to vital statistics of the county. A shaded map, taken from a Local Government Board Report, dealing with Child Mortality at ages 0–5, has created a tremendous amount of interest, and brought many workers to the Welfare field. Other posters are hand painted: attractive babies with wise sayings attached to

them. There is a large diagram showing what happens when foreign bodies are pushed down drains ; a list of the " Health Chores," now so much a feature of health propaganda work in American schools, and two diagrams from the Milk Commission Report, showing respectively the human and the cow population of England.

There are model cots, a playing pen, and a " Baby Jumper," made by the blinded warriors at St. Dunstan's.

In the Economy Section are some useful articles made by an amateur from discarded tins : pastry cutters, flour dredgers, and scoops, pans, candle sticks, lading tins, teapots, and, most popular of all, a little oven for fitting over a gas ring, made from two biscuit tins. We got the notion from an American book, called " Tin Can Toy Making." The idea apparently originated during the war, owing to a dearth of necessities and plenitude of waste tin.

Among other exhibits are a baby's wool frock, made from the best pieces of a scarf already worn three years ; an attractive handbag fashioned from an old panama hat ; and a summer dressing gown and cap, made from a dyed cotton bed spread that cost 5s. 6d., and served as a quilt for years.

Food ideas include vitamines, calories and balance.

The Exhibition owes much to my assistant, Miss E. F. Brown, who has had charge of it from the beginning.

Practical demonstrations by the County Health Visitors form a popular feature.

The 1922 demonstrations include, as well as the ever-popular " How to bath the baby ;" how to make a one-piece dress any woman would be pleased to wear ; how to make the new salads ; how to make five useful articles from three sheets of brown paper ; how to cook cabbage, cheese, and other oddments ; and the artistic and hygienic furnishing of the minature residence.

There is a great field before the daylight cinema when this is within our reach.

Decisions of the Council on Resolutions passed at the Bournemouth Congress, 1922.

SECTION B.—ENGINEERING AND ARCHITECTURE.

"That Parliament should grant Powers enabling Local Authorities to insist upon the provision in new dwellings of an adequate access of light to Living Rooms and Bedrooms."

This resolution was referred to the Special Committee appointed by the Institute to consider and suggest amendments to the Ministry of Health Model Bye-laws. This Committee is still sitting.

CONFERENCE I.—REPRESENTATIVES OF SANITARY AUTHORITIES.

"That in the opinion of this Congress of The Royal Sanitary Institute, held at Bournemouth in July, 1922, H.M. Government should be urged to take immediate effectual steps to secure a safe milk supply for the people."

A copy of this resolution was forwarded to the Ministry of Health.

CONFERENCE II.—MEDICAL OFFICERS OF HEALTH.

"That in the opinion of this Congress, Sanitary Authorities should be required to set out for the approval of the Ministry of Health a general scheme of propaganda work in health matters, including co-operation with the various voluntary agencies."

A copy of this resolution was forwarded to the Ministry of Health.

CONFERENCE IV.—VETERINARY INSPECTORS.

"That this meeting re-affirm last year's resolution :—'That this section urge upon the Council of the Institute the need for re-submitting to the Ministry of Agriculture the resolution of last year on the subject of the Tuberculosis Order and for stating emphatically that there should be no further delay in the re-introduction of the order.'"

A copy of this resolution was forwarded to the Ministry of Agriculture and Fisheries.

"That this meeting recommends The Royal Sanitary Institute to press upon the Government the wisdom of making the Dairies and Cowsheds Order compulsory over the whole country."

A copy of this resolution was forwarded to the Ministry of Health.

"That the Dairies, Cowsheds and Milkshops Order be amended so that power be given to Local Authorities to licence suitable persons who desire to carry on the business of a cow-keeper, dairyman or purveyor of milk in connection with approved premises only ; further that such licences shall be renewed annually."

A copy of this resolution was forwarded to the Ministry of Health.

"That in the opinion of the Conference, ante-mortem examination of all animals intended for slaughter as human food is absolutely essential in any comprehensive national system of meat inspection if such system is to have its greatest effect."

A copy of this resolution was forwarded to the Ministry of Health.

Midwives and Unqualified Practice.—Note on the present position.

LOCAL Authorities entrusted with the administration of the Midwives Acts have always experienced considerable difficulty in attempting to control unqualified practice. Section 1 (2) of the Midwives Act of 1902 states that no woman shall habitually and for gain attend women in childbirth otherwise than under the direction of a qualified medical practitioner, unless she is certified under the Act. From the beginning Local Supervising Authorities have been much hampered in the successful institution of proceedings under this Section by the unfortunate wording of the statute and the misinterpretation to which the Section is liable. Before a conviction can be obtained three difficulties have to be met and overcome.

The first lies in the word "habitually." To succeed it is necessary to prove a series of births attended. This may often be almost impossible because, on becoming alarmed at the enquiries which are being made, the handy woman has only to suspend her activities for a few months in order to avoid proceedings.

The second lies in the word "gain." Most of the unqualified women do receive payment, but it is sometimes difficult to obtain the evidence. As many of the patients are poor, the payment may be delayed, and after enquiries are set on foot the woman may and frequently does refuse to accept the money offered.

The third difficulty lies in the words "under the direction of." It is often argued on behalf of the accused woman that if a doctor is engaged to attend a birth he need not be present at the time of delivery: he can direct operations, as it were, from the base.

The General Medical Council it is true, in 1914, issued a circular on the subject, and paragraph 6 of the circular states:—

"Whereas it is provided in the Midwives Act, 1902, in the Midwives (Scotland) Act 1915, and the Midwives (Ireland) Act 1918, that "No woman shall habitually and for gain attend women in childbirth otherwise than under the direction of a qualified medical practitioner unless she be certified under this Act."

"And whereas it has been made to appear to the General Medical Council that certain qualified medical practitioners have, from time to time, by their countenance or assistance or by issuing certificates, notifications, or other documents of a kindred character, knowingly enabled uncertified women, on pretence that such women were under their direction, to attend women in childbirth, contrary to the law";

"And whereas such conduct is, in the opinion of the Council, discreditable to the profession of medicine and calculated to defeat the purpose of the Statutes made in the public interest for the protection of mothers and infants";

"Notice is hereby given that any registered practitioner who is proved to have so offended will be liable to have his name erased from the Medical Register."

Fortunately the Central Midwives Board has at last given an expression of opinion, although the law has to be altered before the difficulties can be removed.

On 16th November, 1922, the Royal Sanitary Institute sent a letter, of which the following is a copy, to the Central Midwives Board:—

At the Congress of the Royal Sanitary Institute held at Bournemouth in July last, and subsequently in correspondence from the Dorset County Council, the attention of the Council of the Institute was drawn to the fact that there appeared to be an increase in the number of women attended in childbirth by unqualified midwives, most of whom acted ostensibly under the direction of a medical practitioner, but actually independently, and only under the cover of a doctor.

It is stated that in several of the cases the fact of the attendance of the unqualified person had only been discovered because of the death of the lying-in woman, or because of the notification of puerperal fever in the mother or of ophthalmia neonatorum in the child, conditions due to neglect or unskilful treatment at the time of, or after the birth of the child.

In view of these conditions, the Council of the Institute desire to urge that action should be taken either by amending Section 1, sub-section 2, of the Midwives Act, 1902, or otherwise, in order to strengthen the law and to prevent unqualified persons from attending women in child-birth without the effective direction of a qualified medical practitioner.

An amendment of the Act would, in the opinion of the Council of the Institute, if it secured the abolition of unqualified midwifery throughout the country, not only have a most beneficial influence in preventing sepsis in lying-in women, but would improve the position of the certified midwives, whose practices at present are adversely affected by unqualified women acting under the cover of a registered medical practitioner.

And on 22nd December, 1922, the Board replied in the following terms:—

I placed your letter of the 16th November last as to amending Section 1 sub-section (2) of the Midwives Act, 1902, before the Board at its meeting yesterday, when the following Resolution was passed:—

"That the Secretary of the Royal Sanitary Institute be informed that in the opinion of the Board the words 'under the direction of' in Section 1 (2) of the Midwives Act, 1902, mean 'in the presence and under the direction of.' The Section also includes the words 'habitually and for gain' which are unnecessary, lead to confusion, and generally render the Section futile. The Board will take the earliest opportunity of pressing for the necessary amendments."

It would seem, therefore, that there is a reasonable prospect that steps will now be taken to amend Section 1 (2) of the Act. It is certainly quite time that the hands of Local Authorities were strengthened to enable them to deal with unqualified practice. As far back as 1910 the County Medical Officer for Durham drew attention to the great obstacle imposed by the unfortunate wording of the Section to which we have already referred, and the County Council informed the Central Midwives Board that the Section should be altered by the omission of the words " habitually and for gain," and by the substitution of the words " under the immediate personal direction of a qualified medical practitioner " for the words " under the direction of a qualified medical practitioner."

OBITUARY.

PROFESSOR J. RADCLIFFE, M.Sc., Tech., F.R.Met.Soc.
(Fellow.)

We have to record, with much regret, the death of Professor Radcliffe, head of the Sanitary Engineering Section of the Manchester College of Technology, which occurred on February 23rd; at the age of 66. He was born at Rochdale, and after leaving school attended science classes and won one of the first scholarships awarded in the town to Owen's College, where he took courses in chemistry and engineering. After an apprenticeship to an engineering firm, he passed to the service of the Waterworks Department of the Rochdale Corporation. Later he became engineer and manager to the Todmorden Waterworks Company, a position that he occupied until 1898. He then took up private practice, and in 1903 was appointed to the Sanitary Engineering Department of the Manchester School of Technology.

Professor Radcliffe had been closely connected with the work of the Royal Sanitary Institute for very many years. In 1886 he passed its examination. In 1902 he was one of the Local Secretaries organising the arrangements for the Congress and Exhibition of the Institute held in Manchester, which was a very successful meeting; and he was for very many years one of the Board of Examiners, and also a member of the Council, the meetings of which he attended regularly, coming up to London for the purpose.

His ever ready assistance in matters relating to the work of the Institute will be a great loss, and his friendly and familiar presence will be much missed by his colleagues on the Board of Examiners and the Council, with whom he was so frequently and helpfully associated. He leaves a widow and three sons.

THE ROYAL SANITARY INSTITUTE.

FOUNDED 1876.

HULL.

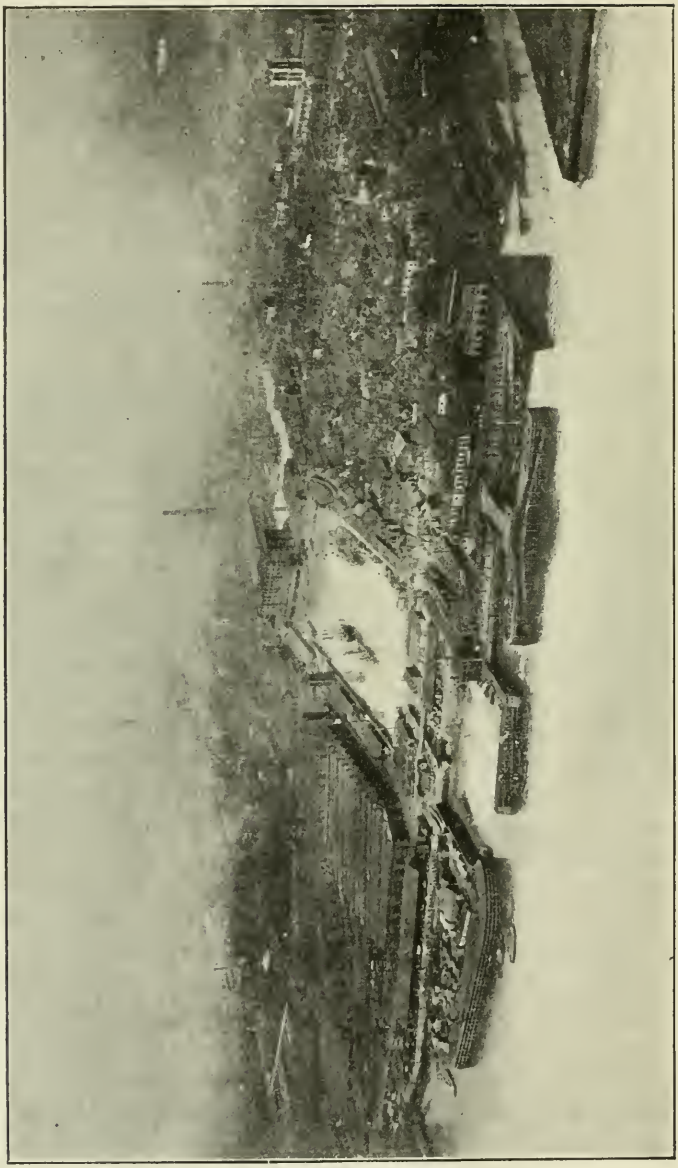
Place of Meeting for the Congress and Exhibition of the Institute, 1923, by T. SHEPPARD, M.Sc., F.G.S., F.S.A.Scot., Curator of the Municipal Museums.

THE Ancient Town of Kingston-upon-Hull is situated on the River Humber, one of the finest water-ways in the world, and extends for about five miles along its northern shore. The history of Hull is one of uninterrupted progress from the time the site was obtained from the Monks of Meaux in 1299.

As Kingston-upon-Hull was under Royal Patronage, the De-la-Poles and other wealthy merchants flourished; a Royal Charter was given to the town in 1299, entitling the Burgesses or Freemen of the Borough to certain rights and privileges in the way of tolls and fairs, and in other respects. These rights were confirmed in subsequent years by later kings and queens of England, some of whom granted still further privileges; our most recent Charter entitling the City to have a Lord Mayor. These various Charters are preserved at the Guildhall.

At all times every effort was made to encourage trade, and ships were chartered to convey merchandise between Hull and various parts of the world, principally to the nearer Continental ports. The numerous water-ways connected with the Humber enabled the goods to be conveyed to numerous inland towns by means of smaller craft, and consequently ware-houses and wharves were erected to deal with this enormous volume of traffic, which was principally dealt with on the banks of the River Hull, or "Old Harbour."

As years went on, the number of ships increased to such an extent that about two centuries ago it frequently happened that some of the vessels in the upper part of the harbour were so crowded that other boats lower down left Hull, proceeded to some foreign country, unloaded their cargoes, loaded up again with some foreign produce, and returned to Hull before the vessels in the higher part of the harbour were liberated. It was largely in consequence of this state of affairs that about 160 years ago the Government handed over to the old Hull Dock Company the land occupied by the moats and fortifications in order to provide additional dock accommodation. Thus it came about that a line of docks connected the River Hull with the Humber, on the site previously occupied by the walls and



THE PIER AND HUMBER DOCK, HULL.

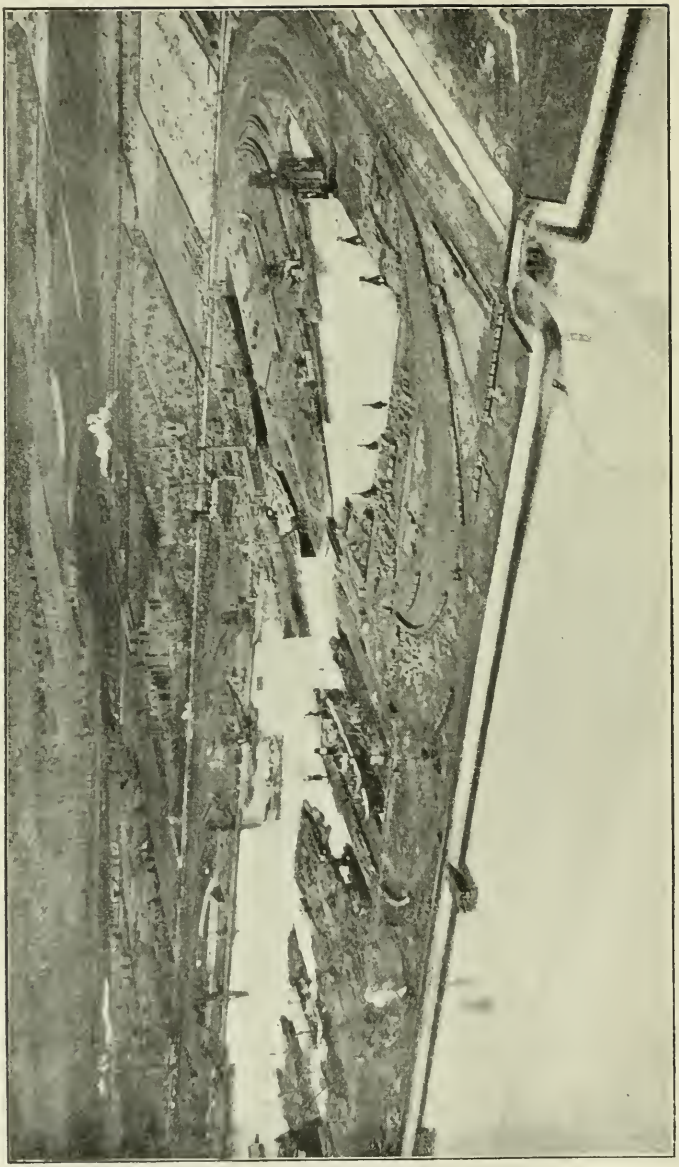
moat, and the name "Dock Walls" is still given to part of the land along the dock side. On looking at a plan of Hull, therefore, the relative position and size of the "old town" (being the town within the docks) and the present city, can readily be seen.

This wall, originally erected in some primitive form in the reign of Edward II., and considerably modified and improved by various later monarchs, was strengthened by numerous towers, upon which guards would be stationed, and access to the outside world was obtained by means of bridges which were lowered over the moat during the daytime; one at Northgate, which led towards Holderness; another at Beverley Gate (where Monument Bridge now is), leading to Beverley; another at Hessle Gate (where Humber Street now is), leading to Hessle. The bridges, which to-day occupy somewhat similar positions to those of the old ones, give an idea of the former appearance of the town, as when these bridges are "up," the "old town" practically becomes an island, surrounded by the Humber, the River Hull, and the three Docks.

This wall was destined to play an important part, not only in the history of this town, but in the history of England. In the year 1639, King Charles I. (after the manner of the earlier King Edward I.) paid a visit, in state, to this town. We learn from the records that on this occasion the Governor and the various town officials were provided with new robes, and they met the King with great pomp and ceremony at Beverley Gate. A fulsome address was read, the keys of the town were handed to the King, as well as a purse of gold. The King and his followers were escorted through the town to High Street (then the principal thoroughfare) to the residence of Sir John Lister, one of the wealthiest of the merchants at that time, who sumptuously entertained the King, and in his house the King slept that night. This house with the rooms very little altered and the oak panelling and elaborately carved overmantel, just as King Charles saw it, is still intact, and known to-day as the Wilberforce Museum.

In 1642, King Charles, remembering the kindness shown and the loyalty expressed on his former visit, came to Hull for support during that serious conflict which was waging in the country, the "Civil War," and on mustering his soldiers in the fields outside Hull (fields now occupied by the City Square, Savile Street and Dock Street), he was greatly offended to find that the Governor, Sir John Hotham, had raised the bridge and declined to allow the King and his followers to enter the city, explaining from his position at the top of the tower of Beverley Gate, that the people of Hull had sympathies with the Parliamentarians, and therefore were unable to assist the King in his war.

The original document recording this "undutiful affront," which was



THE ALEXANDRA DOCK, HULL.

issued by the King at the time, is among the treasures relating to this period which are preserved in the Wilberforce Museum.

On receiving Sir John Hotham's reply, the King arranged his soldiers around the town, bombarded the place with cannon balls of solid iron and stone, and endeavoured to starve the people to submission. The shot, however, did little damage, although in some cases the iron balls were made red hot before being fired; and his efforts to prevent the supplies of food and water reaching the town were unsuccessful owing to the ready access by means of the Humber and the River Hull. The people of Hull replied by firing from the walls, and had previously taken the precaution of destroying the old Charterhouse and one or two other places then situated outside the walls, so that the King's soldiers could not take shelter. Finally Charles gave up the siege, and the opposition, instead of the support which he had expected from Hull, had much to do with the termination of the war.

Since then various industries and trades have sprung up in the town; some have considerably extended, some have been modified in accordance with later conditions; others have disappeared altogether.

One important trade which has disappeared is the whaling industry. Originally commenced in the reign of Queen Elizabeth, it reached its maximum about 150 to 100 years ago, and finally died out about the middle of last century. There are still people living who can remember the time when the "Truelove," "Diana," and other old whalers used to come into the town after being away in the Arctic for twelve months or even longer. These ships went in search of whales, which produced the valuable whale-oil, so much in demand formerly for lighting the streets, and for numerous other purposes. In addition, the baleen or "whale-bone," was valuable on account of its tough and flexible nature. At one time this material is said to have realised as much as £4,000 per ton. It was generally used in the manufacturing of umbrella ribs, corsets, crinolines, sieves, and many other objects.

As a result of the enormous number of whalers visiting the Arctic Seas, not only from Hull, but from Dundee, Aberdeen and other ports, the whales became fewer in number and much more difficult to capture, consequently time after time ships returned empty, or "clean," and the industry gradually waned, but from its ruins sprang up the great fishing and oil industries which form such important factors in the trade of Hull to-day. The scarcity of whale-oil resulted in new sources being sought, and finally the cottonseed, linseed and other oils were obtained by extraction in the various mills.

Similarly, the men trained in the whaling industry were most suitable for manning the old fishing smacks, which in former days supplied a large

part of the population of this country with fish, these smacks being gradually supplanted by the quicker and more effective steam trawlers, which during the war played such an important part in assisting the Navy in its work. In more recent years, flour-milling, chemicals, creosote, machinery, margarine, cement, paints, canisters, starch, blue, blacklead, chocolates, and many other important industries have sprung up in various parts of the city and its outskirts.

In addition to these, the ship-building and associated trades have developed enormously, especially since the introduction of steam, and the construction of vessels of iron and steel, and there is an enormous export trade of coal and various manufactured goods from the West Riding and other inland areas.

As a result of the growth in these various industries, the town has increased in size by leaps and bounds. Old narrow thoroughfares became inadequate to deal with the traffic. Quantities of old property were demolished and fine wide streets erected, lined with excellent shops and public buildings. The natural formation of the soil upon which the city is built results in the streets being perfectly level, enabling them to be paved with wood; in this way they present an appearance rarely equalled in any other city in the Kingdom.

On account of the fact that Hull occupies an isolated position, has no large manufacturing centre for several miles, and is surrounded by the rich fertile lands of the Wolds and Holderness, it has considerable advantages from a health point of view. Its water supply drawn from the Chalk Wolds is particularly pure, and almost unlimited. In many ways the population has much to be thankful for, and the Dean of York's recent suggestion that it should be advertised as a health resort is not as unreasonable as might be thought.

The Guild Hall.

Notes on the Health Administration of Hull. Contributed by J. WRIGHT MASON, M.B.E., M.B., D.P.H., Medical Officer of Health (Fellow).

The population of the City of Hull, according to the Census Returns of 1921, was 287,013, but the present estimation of the Registrar-General is 291,800.

The following figures show the Birth and Death Rates of the city for the past 10 years :—

	Births.		*Deaths.*	
	Number.	*Rate.*	*Number.*	*Rate.*
1912	7,834	27·7	... 4,084	14·4
1913	7,904	27·5	... 4,230	14·7
1914	7,902	27·1	... 4,366	15·0
1915	7,230	24·8	... 4,494	16·7
1916	6,712	23·2	... 4,266	16·6
1917	5,252	19·1	... 3,975	16·1
1918	5,350	19·5	... 5,316	21·5
1919	5,664	19·4	... 4,286	15·1
1920	8,489	29·1	... 3,834	13·2
1921	7,530	25·8	... 3,787	13·0

It may be said that, viewed from present-day standards, Hull has now a complete system of sanitary administration. Of municipal hospitals there are the City Infectious Diseases Hospital, Hedon Road, Hull, 120 beds ; the

THE CITY HALL.

Evan Fraser Smallpox Hospital and Auxiliary Infectious Diseases Hospital, at Sutton-on-Hull, 150 beds ; and the Tuberculosis Sanatorium at Cottingham, 132 beds. Sections of a new Infectious Diseases Hospital are also at

present in course of erection on the Cottingham Castle Estate, about four miles distant from the city. In addition, there are two Tuberculosis Dispensaries, one in East and one in West Hull, a Municipal Maternity Home and various clinics, dining centres, food distribution depôt, etc., in connection with the Infant Welfare Scheme. The School Medical Department has also a Central Clinic, and Branch Clinics in various parts of the city.

The Corporation possesses an up-to-date and well-equipped Disinfecting Station in Scarborough Street (fitted with Washington-Lyons apparatus), which was one of the first of its kind to be erected in the country.

The City Mortuary is situated in Castle Street, and the Crematorium in the cemetery on the Hedon Road.

The Municipal Museum and Royal Institution.

The problem of the collection and disposal of nightsoil and refuse reaches somewhat abnormal dimensions in Hull owing to the regretably large number of privies and privy-pails in the city. There still remain some 40,000 of these, although costly schemes for conversion are at present in operation. For the year 1922-23, the cost of nightsoil and refuse collection and disposal is estimated to be £41,875. In the northern district of the city a large marl pond is at present being utilised as a refuse tip, and is found to be a most economical and convenient (though somewhat undesirable) means of disposal, as many as 30 loads per day being tipped. The Refuse Disposal Scheme also includes two refuse destructors, two sewage pumping stations, and one refuse crushing plant. In addition, a baling press for old tins is being obtained. The

Health Department of the Corporation has also under its control a cart works, fitted with modern machinery, for the building and repair of nightsoil carts, dry-dust vans, etc.

The city is well provided with Public Baths, these being situated at Madeley Street (West Hull), Holderness Road (East Hull), and Beverley Road (North Central Hull).

Housing and Town Planning Schemes have for some time occupied the attention of the Corporation, and recently a special Committee was formed to deal exclusively with these matters. Along with most large centres, Hull has its Municipal Housing Schemes, principally three large suburban sites—on the Hessle Road, the Cottingham Road and the Holderness Road. Up to the present time 516 houses of the parlour and non-parlour types have been erected, and all are in use and tenanted. A further 74 houses are in course of erection on the Hessle Road site, and 50 on the Cottingham Road site.

An Unhealthy Area Improvement Scheme is also well in hand.

In connection with town planning, several fine new road works have just been completed by the Corporation, and other interesting schemes for town planning, road building, and bridge building are at present either in operation or are under consideration.

The Port sanitation is controlled by the Hull and Goole Port Sanitary Authority, which was constituted under an Order of the Local Government Board dated 11th June, 1887. The Authority discharges port functions in the waters abutting on Hull, Goole, Gainsborough, Scunthorpe, etc., and as the trade of the Port of Hull is world-wide and of endless variety, all aspects of port sanitary administration receive the attention of the Authority and its officers.

GENERAL NOTES.

Examination for Health Visitors and School Nurses.
REVISED REGULATIONS, 1923.

The Royal Sanitary Institute established in 1908 an examination for Health Visitors and School Nurses and the Certificates granted have been very widely adopted by Local Authorities in making appointments.

In 1919 the Board of Education set out requirements with regard to the training and qualification of Health Visitors, and arranged for the granting of certificates which the Ministry of Health stated would be necessary for appointments requiring Government sanction and grant, after a date to be prescribed.

From time to time modifications of these requirements have been introduced, and in July, 1922, the Ministry issued a memorandum naming the Board of Education certificate and also other alternative qualifications that would for the present be accepted for appointments.

Regulations No. 1 with regard to admission to this Examination of the Royal Sanitary Institute has been extended so as to include qualifications named in the memorandum of the Ministry, and from January, 1923, all candidates for the Institute's Certificate will be required to have :—

(*a*) Training in the duties of a nurse at a recognised Hospital Training School for a period of not less than three years ; with

(*b*) The Certificate of the Central Midwives Board or other equivalent qualification in Midwifery ; and also

(*c*) Attendance at a Course of Training approved by the Royal Sanitary Institute.

The Examinations of the Royal Sanitary Institute are well-known, and it is thought that this certificate which specially applies to the work and duties of a Health Visitor, being supplemental to the minimum requirements of the Ministry of Health, will be considered by Local Authorities in making appointments as providing evidence of additional training.

In certain cases where the candidate has already the required nursing training and holds the C.M.B. Certificate, and has held office as a Health Visitor under a Local Authority for more than a year, the Committee may consider this practical experience of the duties of the office as equivalent to attendance at a Course.

MEETINGS HELD.

Reception of Medical Officers from abroad.

A Reception was arranged at the Institute, on February 26th, for a party of Medical Officers from other countries visiting Great Britain, under the auspices of the Health Organization of the League of Nations, the countries represented being :—

Austria.	Hungary.	Roumania.
Belgium.	Italy.	Russia.
Czecho-Slovakia.	Japan.	Sweden.
Denmark.	Norway.	United States of America.
Finland.	Poland.	Yugo-Slavia.
France.		

The guests were received by Sir William Collins, Vice-President ; Dr. Louis C. Parkes, Chairman of Council ; and other Vice-Presidents and Members of Council of the Institute. Among those present were representatives of the Embassies of the foreign countries, a representative of the League of Nations, Officials of the Ministry of Health and the Board of Education, and some of the medical members of Parliament.

The Medical Officers are spending a week in London visiting places of interest in connection with Public Health work and administration. They then divide into small groups and visit several of the large towns, returning again to London about the end of March.

On the first day they visited the Ministry of Health in the morning, and in the evening they came to the Royal Sanitary Institute, and were shewn the development of the many branches of organized Public Health work carried on by the Institute, and the facilities afforded by its building and establishment for maintaining this work throughout the Empire.

This afforded them a typical illustration of how Public Health work in this country is promoted by voluntary institutions.

Sessional Meetings.

Birmingham.—The meeting was held in the University on Friday, February 2nd, when a discussion on "Town and Country Milk Supplies : What is needed for their Improvement," was opened by John Robertson, C.M.G., O.B.E., M.D., B.Sc., Medical Officer of Health, Birmingham. The Chair was taken by Professor H. R. Kenwood, C.M.G., M.B., F.R.S.E., Vice-Chairman of the Council.

On Saturday, February 3rd, visits were made to milk plants, where methods of pasteurisation and sterilisation, bottling, etc., were demonstrated.

Meat Demonstrations.

Further demonstrations in meat inspection for a limited number of inspectors in office are being given in Nottingham and Wolverhampton, and a second series at Birmingham.

In connection with these demonstrations the Ministry sanctioned the payment by Local Authorities of the reasonable expenses of the inspectors attending.

Examinations.

Since the last issue the following examinations have been reported :—

Hobart, Tasmania, October 31st and November 1st, 1922.
Singapore, November 1st, 2nd, 3rd, and 4th, 1922.
Johannesburg, South Africa, November 24th and 25th, 1922.
Pietermaritzburg, South Africa, November 24th and 25th, 1922.
Cape Town, South Africa, November 24th and 25th, 1922.
Auckland, New Zealand, November 29th, 1922.
Wellington, New Zealand, November 29th, 1922.
Cape Town, South Africa, December 8th and 9th, 1922.
Johannesburg, South Africa, December 8th and 9th, 1922.
Hong Kong, December 11th and 12th.
Hereford, January 19th and 20th.
Preston, February 2nd and 3rd.
Hull, February 9th and 10th.

At these examinations 168 candidates presented themselves, and the following were awarded certificates :—

Sanitary Science as applied to Buildings and Public Works.

Cran, Newell Burnett, *Salisbury.*
Jackson, Clarence Soulby, *Bloemfontein.*
Jones, Alfred Morris, *Kilburn.*
Moonsawmy, Harry Augustine, *London.*
Whale, Garnet Robert, *Transvaal.*

Inspectors Qualifying for Membership.

Clinch, Herbert George, *Halifax.*

Maternity and Child Welfare Workers.

Speller, Beatrice May, *W. Derby.*
Weall, Louise, *West Bromwich.*
Wright, Louisa, *Leicester.*

Women Health Visitors and School Nurses.

Dixon, Daisy Annie, *Hull.*
Holmes, Amy, *E. Coppull.*

Sanitary Inspectors.

Ashcroft, Robert Walker, *Frankton.*
Aslett, Francis, *Hong Kong.*
Barnett, Henry Daniel Maxwell, *Somerset E.*
Blake, Martin Thomas Horten, *Hong Kong.*
Bridges, Herbert Parker, *Dersley.*
Brown, Phyllis Warden, *Pretoria.*
Butterfield, Thomas William, *Roberts Heights.*
Cerff, Frank, *Cape Town.*
Cosay, Rose, *Cape Town.*
Darnbrough, Mark, *Hamilton.*
Davis, Terry Roberts, *Leominster.*
Day, Edward Henry, *Kingsland.*
de Villiers, Cornelius V., *Observatory.*
du Plessis, Daniel Jonathan, *Johannesburg.*
Earp, Lottie M., *Wellington.*
Evans, David Alexander, *Napier.*
Evans, Ellis David, *Palmerston, N.*
Evans, Harry Redvers, *Barry.*
Evans, William Maurice, *Welshpool.*
Garside, Charles, *Onehunga.*
Goudie, William Henry, *Edendale.*
Green, Joseph Albert, *Sorell.*
Hague, Harold Hudson, *Colne.*
Hewitson, Eric, *Johannesburg.*
Hunter, Harry Garth, *Kendal.*
Irving, Robert Davidson, *Penrith.*
Jack, Lewis Scott, *Peterhead.*
Jane, Eldred, *Hong Kong.*
Johnson, Cecil William, *Petone.*

JORDAN, ERNEST EDWARD, *Llandrindod Wells.*
KEEN, JOSEPH CLEMENT, *Latrobe.*
KINGDON, SAMUEL RICHARD, *Mount Eden.*
LEAPER, HARRY, *Halifax.*
LEWIS, JOHN WILLIAM, *Hamilton.*
LLOYD, JOHN THEODORE, *Gisborne.*
LOCKHART, HENRY LANE, *Hong Kong.*
LONERGAN, SEPTIMUS EDWARD JAMES, *Ponsonby.*
LUCOUW, KAREL CORNELIUS JACOBUS, *Pretoria.*
MAGNUSSEN, MAXIMILIAN ARNOLDUS, *Johannesburg.*
MANTLE, ERNEST JOHN, *Rosebank.*
MILLS, WILLIAM GEORGE, *Mount Albert.*
MORGAN, TYDVIL GWENDOLINE, *Pant-Dowlais.*
MORRISH, CYRIL GORDON, *Hereford.*
MOUNTJOY, WILLIAM JOSEPH, *New Plymouth.*
ORR, THOMAS, *Beaconsfield.*
PHILLIPS, JAMES WHITE, *Pinelands.*
RAE, GEORGE, *Salt River.*
REED, LEWIS RICHARD, *Johannesburg.*
RICHARDSON, HERBERT CHARLES, *Randfontein.*
RICKETTS, SIDNEY FLEMING, *Parow.*
ROBINSON, VERNON, *Nelson.*
ROYALL, JAMES FREDERICK CHARLES, *Norwich.*
RUSSELL, BERTRAM WILLIAM, *Maraisburg.*
RUSSELL, JOHN STANLEY *Johannesburg.*
SAVAGE, ERNEST, *Hong Kong.*
SHIPWAY, NORMAN SEPTIMUS, *Johannesburg.*
SMITH, ALEXANDER, *New Norfolk.*
TURLEY, CYRIL ERNEST, *Grey Lynn.*
VAN WYK, GERT HENDRIK, *Elsburg.*
WARK, JOHN, *Auckland.*
WATSON, GUY FRASER TENNANT, *Kenilworth.*
WHITELAW, ISABELLA, *Leeds.*
WILLCOCKS, JAMES SELLERS, *Whangarei.*
WOOD, CHRISTOPHER ALBERT, *Hereford.*
YOUNG, ERNEST ANDREW WALTER, *Wynberg.*

Sanitary Inspectors in Malaya.

AIYATHURAI, GEORGE KULANAYAGAM.
DRAGE, ALEXANDER WARTON.
JACOBS, CHRISTIAN HENRY.

Special South African Meat Inspector's Certificate.

CAREY, ERNEST GEORGE, *Krugersdorp.*
JOOSTE, CASSIEN KLAASEN, *Transvaal.*

Inspectors of Meat and other Foods.

BARD, ERNEST EMILE, *Johannesburg.*
GROOM, GEORGE, *Johannesburg.*
IDE, EDITH ERNIE, *Johannesburg.*
SCOTT, BERTRAM JOHN MILEHAM, *Kroonstad.*
SIMPKINS, REGINALD PERCY, *Johannesburg.*

DOMINION AND FOREIGN NOTE.

Dr. E. P. Minett has resigned from the Board of Examiners for the British West Indies as he has left for Hong Kong. Dr. Minett gave the Institute valuable assistance in establishing the Board of Examiners in British Guiana in 1913, and in acting as Hon. Secretary of the Board, and later in the extension of the Examinations to the other West Indian Islands in 1920, under the Joint Board for the British West Indies.

FORTHCOMING MEETINGS.

Sessional Meetings.

Nottingham.—Friday, April 20th, at 5 p.m. in the Exchange Buildings. Discussion on "The Nottingham Venereal Diseases Clinic: its work and its history, as illustrating principles upon which schemes for dealing with V.D. Problems should be based," to be opened by Dr. J. C. Buckley and Dr. P. Boobbyer. The Chair will be taken by Professor H. R. Kenwood, C.M.G., M.B., F.R.S.E., Deputy-Chairman of the Council.

His Worship the Mayor, Alderman Manning, J.P., has kindly arranged to receive the members and to entertain them at tea before the meeting at 4.30 p.m.

On Saturday, April 21st, visits will be made to the V.D. Clinic and Bacteriological Laboratory and the Sherwood Building Estate.

Guildford.—Friday, April 27th, at 6 p.m. in the Guildhall. Discussion on "Things that Matter in Public Health," to be opened by Sir Arthur Newsholme, K.C.B., M.D., F.R.C.P. Hon. Local Secretary, Joseph Cates, M.D., D.P.H., Medical Officer of Health, Surrey C.C. The chair will be taken by Louis C. Parkes, M.D., D.P.H., Chairman of Council.

Cambridge.—Saturday, June 23rd. Discussion on "The Grading of Milk," to be opened by J. E. Purvis, M.A., with visits in the afternoon to dairy farm producing "certified" milk and to the Field Laboratories. Hon. Local Secretary, A. J. Laird, M.D., D.P.H., Medical Officer of Health, Cambridge. The chair will be taken by Prof. H. R. Kenwood, C.M.G., M.B., F.R.S.E., Deputy Chairman of the Council.

Ordinary General Meeting.

The Ordinary General Meeting will be held at the Institute on Wednesday, April 25th, at 4.30 p.m.

Congress.

The Right Hon. T. R. Ferens, P.C., J.P., High Steward of Hull, has consented to act as President of the Congress to be held in Hull from July 30th to August 4th.

The Right Hon. the Lord Mayor has been elected Chairman of the Local Committee; Mr. Thomas G. Milner, F.S.A.A., Hon. Treasurer; and Mr. H. A. Learoyd, M.A., LL.B., Town Clerk, and Dr. J. Wright Mason, M.B.E., Medical Officer of Health, as Hon. Local Secretaries.

A form of application for Member's ticket, together with a list of officers of Sections and Conferences, accompanies this Journal.

Reduced Railway Fares.—Arrangements have been made with the Railway Companies to issue return tickets to Hull at a single fare and a third, available from July 28th to August 6th. A certificate to obtain reduced fares will be forwarded with the Congress tickets.

Examinations.

In Sanitary Science and for various offices in the Public Health Service :—

Aberystwyth, March 9th and 10th.
Bournemouth, March 16th and 17th.
Edinburgh, March 23rd and 24th.
Manchester, April 6th and 7th.

Calendar for March and April.

As far as at present arranged.

MARCH.

2 F. Lecture to Sanitary Officers and to Health Visitors and Child Welfare Workers, at 6 p.m. Sanitary Appliances, by F. Osborne Smith, F.R.I.B.A.

2 F. } **Sessional Meeting, Sheffield,** in the Town Hall, at 4.30 p.m. Discussions on
3 S. } "Extraneous Matters in Food," to be opened by J. Evans, City Analyst, and "The Prevention of Disease by Feeding," to be opened by Prof. E. Mellanby M.A., M.D.

3 S. Demonstration—Meat Inspectors, Metropolitan Cattle Market, at 12.30 p.m.

3 S. Inspection and Demonstration at the Kensington Disinfecting Station, at 2.30 p.m. Conducted by James Fenton, M.D., D.P.H.

5 M. Lecture to Sanitary Officers and to Health Visitors and Child Welfare Workers, at 6 p.m. House Drainage, by F. Osborne Smith, F.R.I.B.A.

7 W. Inspection and Demonstration at Knight's Soap Works, Silvertown, E., at 2.30 p.m.

7 W. Lecture to Sanitary Officers, at 6 p.m. Details of Plumbers' Work, by Walter Scott.

7 W. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Water Supply: Fittings and Ventilation in the Home, by J. H. Clarke, Chief Sanitary Inspector, Chiswick.

8 Th. Lecture to Sanitary Officers and to Health Visitors and Child Welfare Workers, at 6 p.m. Ventilation and Warming, by Edward Willis, M.INST.C.E., F.S.I., Engineer and Surveyor, Chiswick.

9 F. }
10 S. } Examinations—Aberystwyth.

10 S. Lecture to Meat Inspectors at the Metropolitan Cattle Market, at 11.30 a.m., by J. R. Hayhurst, M.R.C.V.S.

10 S. Demonstration—Meat Inspectors, Metropolitan Cattle Market, at 12.30 p.m.

12 M. Lecture to Sanitary Officers, at 6 p.m. Calculations, Measurements and Plans and Sections, by W. C. Tyndale, O.B.E., M.INST.C.E.

12 M. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Organisation and Management of Infant Welfare Centres and Clinics, by K. M. Vaughan, L.S.A., D.P.H., Medical Officer, West Islington Infant Welfare Centre.

14 W. Inspection and Demonstration in the District of Islington, at 2.30. Conducted by G. Clark Trotter, M.D., D.P.H.

14 W. Lecture to Sanitary Officers, at 6 p.m. Building Materials, by F. Wilkinson, M.INST.C.E., Engineer and Surveyor, Willesden.

14 W. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Official and Voluntary Agencies administering to Child Welfare: The Children Act, by K. M. Vaughan, L.S.A., D.P.H.

16 F. Lecture to Sanitary Officers, at 6 p.m. Building Sites, by F. Wilkinson, M.INST.C.E.

16 F Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Prevention of Communicable Disease, by Joseph Cates, M.D., D.P.H., M.O.H., Surrey County Council.

16 F. }
17 S. } Examinations—Bournemouth.

17 S. Demonstration—Meat Inspectors, Metropolitan Cattle Market, at 12.30 p.m.

17 S. Inspection and Demonstration at the Wimbledon Sewage Disposal Works, at 2.30 p.m. Conducted by A. J. Martin, M.INST.C.E.

19 M. Lecture to Sanitary Officers, at 6 p.m. Sewerage, by A. J. Martin, M.INST.C.E.

19 M. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Prevention of Communicable Disease, by Joseph Cates, M.D., D.P.H.

21 W. Lecture to Sanitary Officers, at 6 p.m. Sewage Disposal, by A. J. Martin, M.INST.C.E.

21 W. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Tuberculosis, by Joseph Cates, M.D., D.P H.

23 F. Lecture to Sanitary Officers, at 6 p.m. Water Supply, Sources of Supply and Distribution, by William Matthews, M.INST.C.E.

23 F. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Venereal Diseases, by J. Letitia Fairfield, C.B.E., M.D., D.P.H.

23 F.
24 S. } Examinations, including Meat Inspectors, Edinburgh.

24 S. Lecture to Meat Inspectors, at the Metropolitan Cattle Market, at 11.30 a.m., by J. R. Hayhurst, M.R.C.V.S.

24 S. Demonstration—Meat Inspectors, Metropolitan Cattle Market, at 12.30 p.m.

24 S. Inspection and Demonstration at the Colne Valley Water Works, Bushey, at 2.30 p.m. Conducted by W. Matthews, M.INST.C.E.

24 S. Demonstration to Health Visitors and Child Welfare Workers, in the Parkes Museum, at 3 p.m. Conducted by J. H. Clarke.

26 M. Lecture to Sanitary Officers at 6 p.m. Scavenging, Disposal of House Refuse, by W. R. Hicks, A.M.INST.C.E., Borough Engineer and Surveyor, Ealing.

30 F. **Good Friday.**

APRIL.

2 M. **Easter Monday.**

4 W. Lecture to Sanitary Officers, at 6 p.m. The Laws, By-Laws, and Regulations affecting the Sale of Food, by J. Spencer Low, C.B.E., M.B., B.SC., D.P.H.

4 W. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Ante-natal Hygiene (1), by Margaret G. Thackrah, B.A., M.D., M.R.C.P.

5 Th. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Ante-Natal Hygiene (2), by Margaret G. Thackrah, B.A., M.D., M.R.C.P.

6 F. Lecture to Sanitary Officers, at 6 p.m. The Appearance and Character of Fresh Meat and other Foods, by J. Spencer Low, C.B.E., M.B., B.SC., D.P.H.

6 F. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Care of Mother and Infant (1), by Margaret G. Thackrah, B.A., M.D., M.R.C.P.

6 F.
7 S. } Meat Inspectors Examination, Manchester.

7 S. Demonstration—Meat Inspectors, at the Metropolitan Cattle Market, 12.30 p.m.

7 S. Inspection and Demonstration at the Sewage and Destructor Works, Ealing, at 2.15 p.m. Conducted by W. R. Hicks, A.M.INST.C.E., Borough Engineer and Surveyor, Ealing.

7 S. Demonstration to Health Visitors and Child Welfare Workers, in the Parkes Museum, at 3 p.m. Conducted by J. H. Clarke.

9 M. Lecture to Sanitary Officers and Meat Inspectors, at 6 p.m. Signs of Health and Disease in Animals destined for Food, by J. R. Hayhurst, M.R.C.V.S.

9 M. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Care of Mother and Infant (2), by Margaret G. Thackrah, B.A., M.D., M.R.C.P.

11 W. Demonstration—Meat Inspectors, at Smithfield Market, at 11 a.m.

11 W. Inspection and Demonstration at Maypole Margarine Works, Southall, at 2.30 p.m.

11 W. Lecture to Sanitary Officers and Meat Inspectors, at 6 p.m. The Names and Situations of the Organs of the Body in Animals, by Lieut.-Colonel T. Dunlop Young, O.B.E., M.R.C.V.S., D.V.S.M. (Lond.).

11 W. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Infant Feeding, by G. Eric Pritchard, M.A., M.D., M.R.C.P.

13 F. Lecture to Sanitary Officers and Meat Inspectors, at 6 p.m. Practical Methods of Stalling and Slaughtering Animals, by Lieut.-Colonel T. Dunlop Young, O.B.E., M.R.C.V.S., D.V.S.M. (Lond.).

13 F. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Infant Feeding, by G. Eric Pritchard, M.A., M.D., M.R.C.P.

13 F. } Examinations, Sheffield.
14 S. } Examination, Meat Inspectors, Exeter.

14 S. Demonstration—Meat Inspectors, at the Metropolitan Cattle Market, 12.30 p.m.

14 S. Demonstration to Health Visitors and Child Welfare Workers, in the Parkes Museum, at 3 p.m. Conducted by J. H. Clarke.

16 M. Lecture to Sanitary Officers and Meat Inspectors, at 6 p.m. Diseased Meat, with a Demonstration of Morbid Specimens collected from Meat Markets. by J. R. Hayhurst, M.R.C.V.S., D.V.S.M.

16 M. Lecture to Health Vistors and Child Welfare Workers, at 6 p.m. Food and Clothing, by C. W. Hutt, M.D., D.P.H., M.O.H., Holborn.

17 Tu. Demonstration in Fish Inspection for Meat Inspectors, at the Institute, at 5 p.m., by Charles Hattersley, Chief Fish Inspector, Fishmongers' Company.

18 W. Inspection and Demonstration at the Metropolitan Cattle Market, at 11 a.m. Conducted by J. R. Hayhurst, M.R.C.V.S., D.V.S.M.

18 W. Lecture to Sanitary Officers, at 6 p.m. The Hygiene of Cowsheds, Dairies and Slaughterhouses, by J. Spencer Low, C.B.E., B.SC., M.B.

18 W. Lecture to Health Visitors and Child Welfare Workers, at 6 p.m. Care of Infants and Young Children, by Miss Isabel Macdonald.

20 F. } Examinations—Belfast.
21 S. }

20 F. } **Sessional Meeting, Nottingham,** at 4.30 p.m., in Exchange Buildings. Discus-
21. S. } sion on "The Nottingham V.D.C. Clinic: Its work and its History," to be opened by Dr. J. C. Buckley and Dr. P. Boobbyer.

21 S. Lecture to Meat Inspectors at the Metropolitan Cattle Market, at 11.30 a.m., by J. R. Hayhurst, M.R.C.V.S.

21 S. Demonstration to Health Visitors and Child Welfare Workers, in the Parkes Museum, at 3 p.m. Conducted by J. H. Clarke.

23 M. Lecture to Meat Inspectors, at 5 p.m. Food Accessory Substances, Milk, Butter, Cheese, by Prof. H. R. Kenwood, C.M.G., M.B., F.R.S.E.

25 W. **Ordinary General Meeting** at 4.30 p.m.

25 W. Lecture to Meat Inspectors, at 5 p.m. Bread, Eggs, Tea, Coffee, Cocoa, and other Foods, by M. E. Delafield, M.C., B.A., M.B., D.P.H.

27 F. **Sessional Meeting, Guildford,** in the Guildhall, at 6 p.m. Discussion on "Things that matter in Public Health," to be opened by Sir Arthur Newsholme, K.C.B., M.D.F.R.C.P.

27 F. } Examinations, London.
28 S. }

28 S. Demonstration—Meat Inspectors, at the Metropolitan Cattle Market, 12.30 p.m.

30 M. Lecture to Meat Inspectors, at 5 p.m. Imported Meat, Cold Storage, Tinned and Potted Foods, Bacon and Hams, by W. M. Willoughby, M.D., D.P.H., M.O.H., Port of London.

MAY.

4 F. } Meat Examinations—London.
5 S. }

LIST OF MEMBERS AND ASSOCIATES

ELECTED FEBRUARY, 1923.

MEMBERS.

• Sanitary Science Certificate.
w Maternity and Child Welfare Workers' Certificate.
§ Sanitary Surveyors' (India) Certificate.
‡ Sanitary Inspector's Certificate.
m Meat Inspector's Certificate.
v Women Health Visitors and School Nurses' Certificate.
s School Hygiene Certificate.

Reg. No.		
5051	1923. Feb.	‡BARTLETT, Lieut. Percy Howard, R.E., *Royal Engineers' Office, Falmouth, Cornwall.* (*The Bungalow, Pendennis, Falmouth.*)
5065	1923. Feb.	*‡BRIGGS, James Troke, *13, Grosvenor Street, Agbrigg Road, Wakefield.*
5052	1923. Feb.	CARTER, Harold William Augustus, *Engineer and Surveyor, Council Offices, Feltham, Middlesex.*
5066	1923. Feb.	*DEWAR, Henry David, *"Loretto," McDonald Street, Lakemba, Sydney, N.S.W.*
5053	1923. Feb.	FRICKER, Arthur Charles, P.A.S.I., *271, High Road, Ilford, Essex.*
5054	1923. Feb.	HEAD, George Leslie, A.R.I.B.A., *40, Baker Street, Portman Square, W. 1.*
5055	1923. Feb.	JOHNSTON, Walter, A.M.INST.M. & C.E., *Deputy City Surveyor, Town Hall, Durham.*
5067	1923 Feb.	*m*‡¶ JONES, George Handel, *Public Health Office, Office, Diss, Norfolk.*
5056	1923. Feb.	KINGSBURY, Allan Neave, M.B., B.SC., M.R.C.S., L.R.C.P., D.P.H., *The Bland-Sutton Institute of Pathology, The Middlesex Hospital, W. 1.*
5057	1923. Feb.	LIMAYE, Shankar Hari, L.S.E., *Khandre Building No. 4/17, Dadar, Bombay No. 14, India.*
5058	1923. Feb.	LOWE, Peter, M.A., B.SC., M.B., CH.B., D.P.H., (*Co. M.O.H.*), *Westwood, Hampton Park, Hereford.*
5068	1923. Feb.	*MILLER, Frederick Henry, *Inspector of Health, County Office, Kaitaia, New Zealand.*
5059	1923. Feb.	MILES, Ralph Elston, A.M.INST.M. & C.E., *Deputy Borough Engineer, Municipal Buildings, Crewe.*
5060	1923. Feb.	MIRCHANDANI, Hiranand Shewakram, B.E. (BOMBAY), *Civil Engineer, Mirchandani Lane, Hyderabad, (Sind), India.*

5061 1923. Feb. *t‡mMOONSAWMY, Harry Augustine, *The Government Public Health Department, Georgetown, British Guiana.*

5062 1923. Feb. PELLETIER, Lt.-Col. P., *Agent General for Quebec, Kern House, 36 and 38, Kingsway, W.C. 2.*

5063 1923. Feb. SMEDLEY, Joseph Hanson, B.SC., *27, Stanley Street, Loughborough, Leicestershire.*

5064 1923. Feb. SPRAGUE, William John Harry, *71, Finlay Street, Fulham Palace Road, S.W. 6.*

ASSOCIATES.

9015 1923. Feb. ‡ANDERSON, Peter, *69, Nevis Road, Balham, S.W. 17.*

9017 1901. June ‡ASHCROFT, Henry, *Newton-in-Makerfield U.D.C., Town Hall, Earlestown, Lancs.*

8993 1923. Feb. ‡BARNARD, Fred Standen, "*The Spinney,*" *5, Council Houses, Tonygwnlais, near Cardiff, Glam.*

8994 1923. Feb. *v*BEEL, Miss Annie, *Rosebank, Percy Road, Hampton-on-Thames.*

8995 1923. Feb. ‡BILLINGHURST, Miss Olive Margaret, *St. Marylebone Hospital, Ladbroke Grove, W. 10.*

8996 1923. Feb. ‡*m*BINNS, Thomas Wilkinson, *3, Northfield Way, Hallcroft Road, Retford, Notts.*

8997 1923. Feb. ‡BLEASE, Joseph Edward, *15, Nona Street, Seedley, near Manchester.*

8998 1923. Feb. ‡BOWLER, William John, *46, Mile End Road, Colchester.*

8999 1923. Feb. ‡CARRAGHER, Joseph Philip, *9, Sandhurst Terrace, Harehills, Leeds.*

9000 1923. Feb. ‡CLAYTON, Charles Percival Glanville, *1, The Elms, Melrose Street, Hull.*

9001 1923. Feb. ‡DAVIS, Terry Roberts, *The Vinery, Leominster, Herefordshire.*

9002 1923. Feb. ‡ELLIS, John James Gladstone, *67, Derbyshire Lane, Hucknall, Notts.*

9018 1920. Jan. *v*EVANS, Mrs. Frances E., *c/o A. L. Cook, Esq., 54, Broad Street, Palmerston North, New Zealand.*

9003 1923. Feb. ‡EVANS, Harry Redvers, *25, Everard Street, Barry, Glam.*

9004 1923. Feb. ‡GLEN, Miss Jean Napier, *107, Belgrave Road, S.W. 1.*

9005 1923. Feb. ‡HOPKINS, Harry, "*Causeway House,*" *Wirksworth, Derbys.*

9006 1923. Feb. *v*LAUGHLIN, Miss Maud, *12, The Promenade, Consett, Co. Durham.*

9007 1923. Feb. ‡LEA, Ernest, *74, Buttermarket Street, Warrington, Lancs.*

9016 1923. Feb. ‡LOWE, Cecil John Mansfield, *5, Park Parade, Whitley Bay, Northumberland.*

9008 1923. Feb. ‡PARKES, Albert, *2, Beeston Road, New Barnet, Herts.*

9009 1923. Feb. *v*POTTINGER, Miss Jean, *29, Bertram Street, South Shields.*

9010 1923. Feb. *v*SAXON, Miss Eileen, *Lyndhurst, Altrincham, Ches.*

9011 1923. Feb. ‡SCHOFIELD, Arnold, *30, Norway Street, Gorse Hill, Stretford, Manchester.*

9012 1923. Feb. *v*SMITHSON, Miss Hannah Margaret, *48, Wigginton Road, York.*

9013 1923. Feb. ‡UPHAM, Miss Gladys Mary, *Homeland, Brixham, Devon.*

9014 1923. Feb. ‡WOOD, Christopher Albert, *13, Richmond Street, Hereford.*

OBITUARY.

The Council have to report with much regret the death of the following Members :—

James Causland Booth, Chief Sanitary Inspector of Kroonstad. He joined the Institute as an Associate in 1915, and was elected a Member in 1920.

Malcolm James Grange, B.Sc.(Eng.), of Newton-Mearns, Renfrewshire, Scotland, who died at Secondee, Gold Coast, in October last. He was employed on the Government Railways of the Gold Coast. He had been a Member of the Institute for three years.

John Oscroft Littlewood, M.R.C.S., L.R.C.P., D.P.H. He was the Medical Officer of Health of the Blackwell and Skegby Rural District Councils, and had been associated with the Institute for more than 20 years.

FOR EFFICIENT SANITATION

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"SCOUT" SOAP

IN YOUR REQUISITIONS

It is an absolutely pure soap, into which has been incorporated the antiseptic properties of the Pine Forests with the Disinfecting Virtue of Coal Tar.

FOR ALL CLEANSING PURPOSES, INCLUDING THE BATH AND TOILET

PACKED THREE TABLETS IN A CARTON.

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"Brownlow" Filter

FILTRATION THROUGH CYLINDERS OF KIESELGUHR

CRYSTAL PURE WATER. FREE FROM DISEASE GERMS.

CATALOGUE ON APPLICATION.

"QUALITY AND FLAVOUR"

BOURNVILLE COCOA

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SEE THE NAME "Cadbury" ON EVERY PIECE OF CHOCOLATE.

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of the well-known types supplied for many years by Messrs. JOHN JONES (CHELSEA), Ltd., are now being made and supplied by us.

Patent Flexible Bag Stopper.

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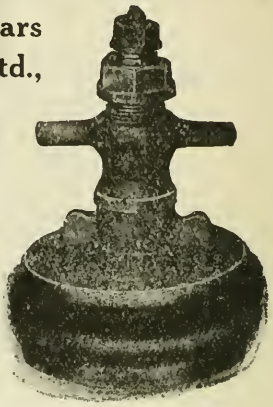

Also Sanitary Fittings to suit Buildings of every description.

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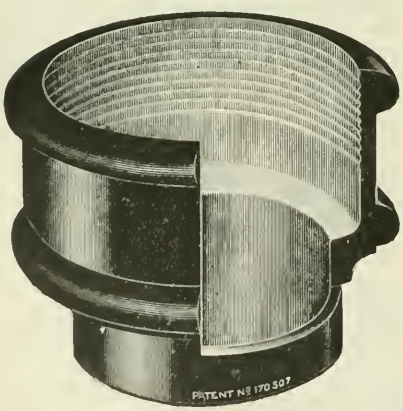

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Invaluable for tropical climates.

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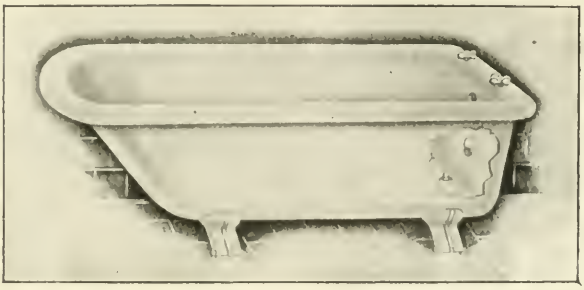

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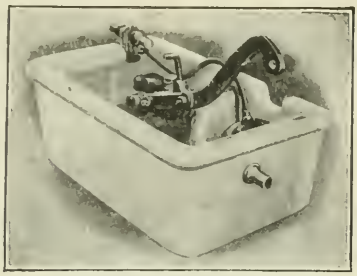

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ALL NOISE IN CISTERN DISCHARGE EFFECTIVELY REMOVED by the

"SWAN" SILENCER

Can be fitted to any type of syphon cistern. Price 25/-.

Awarded Bronze Medal, R.S.I. Exhibition Bournemouth, 1922.

TO MANUFACTURERS:— The "Swan" Silencer can be fitted to any type of water waste preventer.

AGENTS WANTED.

HOLTS PATENTS LTD.,

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"The only safe lavatory cleanser."

Removes all stains and encrustations from W.C. Bowls in a night. No brushes, mops or scouring—Just a sprinkle at night and a flush in the morning is all that's necessary. If your usual dealer cannot supply send us his name and address, we will send you a free sample. Supplied in tins at **6½d. 1/5,** and **8/9.**

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A Hospital Case?

Well — if it isn't he will be lucky. Accidents on your premises can be very expensive to you. Those dim-lighted deep-worn steps down into your basement are just the thing that a hob-nail boot would slip on—and the man who wears the hobnails will most certainly come to you for damages. What's the remedy? New stairs?

No! Cover them with Ferodo Stair Treads and eliminate the danger of slips and falls. Ferodo Stair Treads are the most efficient non-slip stair treads known. They are made of firmly woven fabric, chemically treated to last longer than cast-iron—they have none of the drawbacks of metal treads, and will stand the wear and tear of heavy steel-shod boots in all weathers.

You can have them installed in a few hours, overnight if you like, and be sure of safety, always.

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Patent STAIR TREADS

are not limited to one type of staircase. They are produced in colours and may be fitted to steps of wood, marble, stone or iron. Our Illustrated List gives full description with colours, types and prices. Send for a copy to-day.

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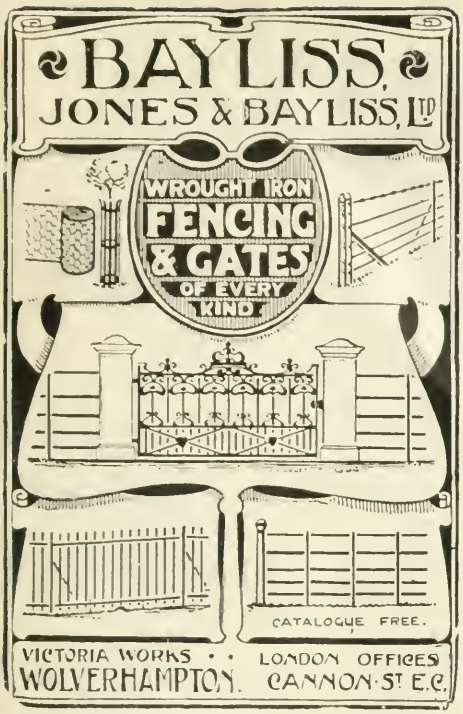

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COLOURMETER

(Lovibond's Tintometer),

Improved form of instrument, the two fields of view being adjacent.

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Sole Makers :

The Tintometer, Ltd.,

SALISBURY.

A NEW SERVICE TO PUBLIC HEALTH

Branch Public Washing Establishments.

THE improvement in hygienic conditions, and therefore in health, which results from the provision of adequate bathing facilities is obvious to everyone, and municipal washing baths are now recognised by all as an essential public service.

Disadvantages of Central Establishments.

In the past, however, thousands of bathers have been compelled to travel long distances in order to obtain a hot bath at a large central establishment—a hot bath which even then was often secured only after a dreary wait in an over-heated atmosphere.

This state of affairs obviously did not encourage personal hygiene.

A New and Better System.

Two important London Boroughs have recently succeeded in overcoming these drawbacks.

Their plan is to decentralise their bathing establishments; that is to say, to set up in various localities a number of branch establishments, each containing about twenty slipper baths, instead of one large central establishment. This method has obvious advantages for the bathers, and their appreciation of the quicker and more efficient service possible under the new arrangements is made clear by the large numbers of users.

Economy.

The installation and running costs of these small bathing centres are low in proportion to the accommodation provided. One male and one female attendant only are required to run each establishment, since the water is heated by gas. If solid fuel had been used, four attendants would have been required for each centre.

Full particulars of the Baths referred to above—photographs, plans, installation and fuel costs, etc.—are contained in "A Thousand and One Uses for Gas" (No. 105), which will be sent post free on application to the Secretary of the undermentioned body.

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DISINFECTANT

THE MODERN HIGH-POWER GERMICIDE

WILL NOT DECOMPOSE, AND RETAINS ITS GERMICIDAL ACTION WHEN MIXED WITH

HARD OR POLLUTED WATER, LIMEWASH, URINE AND OTHER ORGANIC FLUIDS.

NEWTON, CHAMBERS & Co., Limited,

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BY APPOINTMENT.

IZAL

Experts in Rat Destruction

declare that systematic and concerted action with the use of Poison is the only means to effectually deal with the rat pest. Many demand "Rodine" as they declare it ensures success. "I have never known it to fail" writes a Biological Expert. Tins 7½d, 1/3, 2/6 post 3d. 5/- post 6d. Special Discounts on quantities. Write the Maker,

T. HARLEY,
Manufacturing Chemist,
PERTH,———SCOTLAND.

When RATS are reported recommend

'DAK' Ratlime

DAK is free from poison.

DAK does not contain germs.

DAK users are enthusiastic about its simplicity and effectiveness.

DAK *holds* its victims—there is no risk of bodies decomposing under floors.

Supplies of Leaflets fully describing the DAK method and giving reports of users, will be sent free of charge upon request. Prices to the public 2/6, 4/6, 8/6 & 14/6, from Chemists, etc., or post free from the Sole Makers,

KAY BROTHERS Ltd.,
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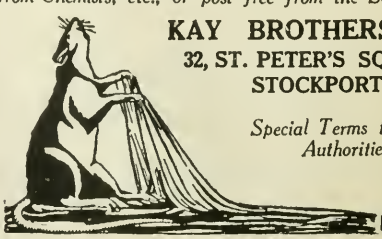
Special Terms to Public Authorities.



Slaughtering of Animals for Food.

It is said that Humane Killers are Dangerous.————But:—

Mr. James Dodds, Superintendent of the Public Slaughter House, Carlisle, writes, October, 1922 :—" I have known and seen cases where the shaft of the axe has caught the horn of the animal and sent the head of the axe flying through the shop. I have also seen cases when the animal has moved his head as the axe has been descending and, having missed the animal, the axe has flown from the operator's hands. But we hear nothing of these cases. The probability of accidents, to my mind, is greater with the axe than with the killer. I have seen three, four, five, and over ten blows levelled at an animal before it has been brought to the ground, and I have known cases, though these are exceptional, where all efforts have failed to bring the animal down through the repeated blows having caused the head to swell, and then a knife has been run into the spine at the back of the head, or a bone laid bare by removing the skin from the forehead, while the animal has been standing so that the weight of the blow is got into the bare bone. These are the things that the humane killers are sweeping away."

The Manager of the Hampshire Farmers' Co-operative Abattoirs & Bacon Factory, Ltd., Eastleigh, writes :—" Accidents (more or less serious) are fairly common in slaughter houses, and are often caused through handling a knife when dealing with a struggling animal. We have had *no* accident with the knife here since using humane killers, although we had several before, and which we think would not have occurred had the humane killers then been in use here."

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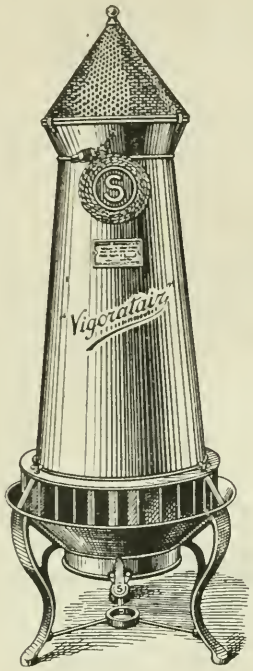

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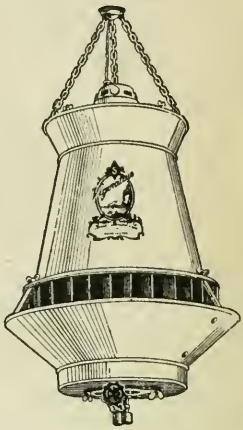

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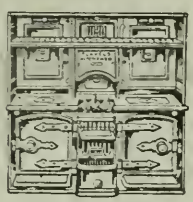

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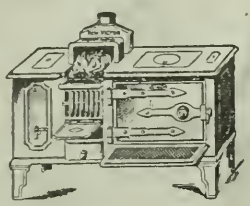

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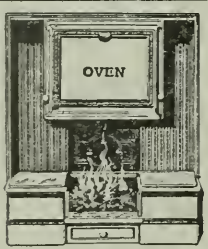

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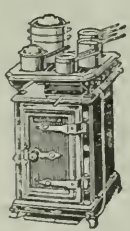

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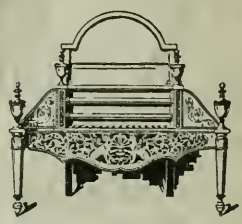

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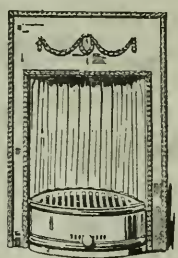

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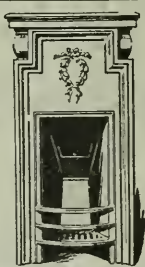

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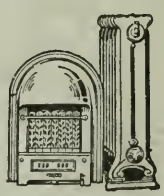

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